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ABSTRACT

The purpose of this book is to give educators new ideas about events happening now that will undoubtedly have an impact on the future and will require major modifications in educational programs. The author synthesizes what he considers salient events and factors that are likely to influence the direction education will take. Chapters 1 through 3 discuss technological advances and other factors shaping the future; chapters 4 through 6 plot strategies for nurturing sufficient personal and group interest in the topics of the future. From the strategies suggested, personal energies can be drawn on to foster action. Or a group of people may be ready to try pilot programs in their schools based on findings from their studies. In this case, the third section of the book, chapters 6 through 8, will be most helpful. Chapter 8 and the appendices call attention to readings, media materials, human resources, and school district sites where the focus is on the future. (Author/MLF)

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By James L. Olivero
1978

LOOKING AT THE CHALLENGES OF THE FUTURE

PROVIDING FOR TOMORROW'S EDUCATION TODAY

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This book is written for persons dedicated to the notion that children must be helped to learn to "live a life." While it is not a given, I presume schools will continue to be the institutions in which we, as educators, will improve the quality of life. If this is our purpose, it becomes clear that significantly better schools will need to be significantly different schools.

JLO

-- Rien n'est parfait, soupira le renard.

Saint-Exupery, Le Petit Prince

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PREFACE

"What kind of a day was it? A day like all days! Everything is as it was then, except you are there." These are the words of Walter Cronkite, spoken some years ago as he introduced an important television documentary series which depicted selected historical events--those events that had much influence on where we as individuals and as a society are today.

As people then influenced our existence today, so we, too, will influence the lives of those who follow us. What we do today will affect our children and our children's children. Unlike the past, though, the pace of change today has accelerated to such a degree we can no longer be satisfied with where we're been.

This accelerated rate of change is well documented by Alvin Toffler, who points out that there has been more change since 1950 than from the time of Julius Caesar up to the mid-twentieth century. Believe it? I didn't until I considered the matter a few moments. Since 1950 some of the major events which have taken place in the United States include: civil rights legislation; the new morality; the drug culture; Vietnam; Watergate; space flight; cloning; explorations into altered states of consciousness; Salk vaccine. This limited list of social/technological achievements (?) is obviously incomplete, but it is indicative of our "future shock" syndrome. Some critics assert that we indeed have already gone beyond the point of no return; they say we are spinning so completely out of control that we have no chance to maintain our equilibrium. Perhaps this is true; I prefer to believe, however, we can define and control our destiny. We need not be trapped in a position where we destroy ourselves!

If this is true, what elements in our society can make a difference? Clearly, the multimedia have an important influence on our future. And concerned individuals can also have an influence. Our most important influence, I predict, will come from our educational system.

It would be ironic if we could turn one of our largest bureaucratic institutions (perhaps the largest) into a vital catalyst seeking positive change. Schools have gone through an evolutionary cycle since the Boston Latin Grammer School (when the school's role was to provide religious preparation) to the present period (where the comprehensive school plan is to provide an entry level employment skill and/or to provide the skills for success in a post-secondary institution). Moving into another cyclical period, schools will need to prepare people not for what has been and is, but for what might be.

What "might be" is fuzzy, imprecise and risky. But our accelerated change process demands that we project the future and plan today for all manner of eventualities. There may be some people who can look into the future: I cannot. What I can do, though--as can any other educator--is look at some of the signs and trends and make some calculated guesses. Moreover, I can plan strategies to help us get there from here. All educators can.

The purpose of this book is to give educators new ideas about events happening now which will undoubtedly have an impact on the future and which--in both the long and short runs--will require major modifications in educational programs. Educators, like others, are often wrapped up in day-to-day crises; seldom is there time to contemplate the "What if?" prospects. Few educators have time to review the literature in such diverse fields as medicine, technology, psychology. Even fewer are the educators who have studied the projections of such futurists as Herman Kahn and Willis Harman. This book attempts to synthesize what the author considers (admittedly with bias) salient events and factors which are likely to influence the direction education will take.

I made the decision to write this book for two reasons. First, members of CADRE (the Collegial Association for the Development and Renewal of Educators) encouraged me to do so. (CADRE is an important organization of educators which stands in the forefront of education, designing plans for progress rather than reacting to crises.) Second, I felt that Alvin Toffler in his book on the future and education described as changes for the schools of the future those ideas many enlightened educators were promoting during the early 1960's. These will not suffice!

The organization of this book is the result of feedback from selected audiences. Beginning in 1970 some members of CADRE and members of the Nueva Day School and Learning Center initiated more than a casual study of the FUTURE. Following the early days of floundering and lack of direction, the staff at Nueva was able to chat with Willis Harman and Peter Shoup. (Currently Harman is associated with the Stanford Research Institute and Shoup is with the Western Behavioral Sciences Institute in La Jolla, California.) These two men, more than any others, provided the impetus to get the study away from rhetoric and into action. Since they have invested much of their lives thinking about the future, we were fortunate they were willing to share with us.

Literature was reviewed, discussion sessions were sponsored, films and filmstrips were reviewed, field trips were taken, and pilot workshops were conducted throughout the study. The latter exercise proved a valuable mechanism for organizing this book as learners (children, parents and school personnel) from many parts of the United States and Canada offered support and constructive criticism. This book is only a first step. I would be presumptuous to suggest that it does anything more than:

- Arouse some awareness about a few of the phenomena that are today influencing the life for tomorrow

- Add to information concerning some areas that seem to have particular importance for education

- Suggest some options for individuals at local sites in making assessments about the applicability of the ideas for their school programs

- Offer some ideas about how one might begin a pilot effort to check the feasibility of additional modifications

- Describe some thoughts about how the change process can become institutionalized--that is, offer some assistance on the strategies for change.

Many readers will recognize the preceding format as a liberalized modification of the Guba and Clark model for change. I've found their organizational pattern to be quite useful over the years--a practical tool for clarifying ideas, establishing guides for direction, carrying out action and evaluating the utility of efforts.

Change can be either positive or negative; seldom is it neutral. What I am concerned about is positive change, not change for the sake of change. Too often we invest many of our scarce educational resources--time, people, materials and tax dollars--into ventures with little payoff. No matter how we try, energies must be directed toward potentially beneficial outcomes.

Not too long ago I attended a high school faculty meeting where the question under consideration for the eighth time was whether or not children in grades nine through twelve should be allowed to chew gum in school. An incredible amount of energy had been invested in the eight meetings. (From visiting the school, I was convinced there were a few "heavier" issues that needed attention.) Just trying to enforce such a rule, had they decided "no gum chewing," would have required further investment of energies--conceivably with limited payoff. The old equation 14 x 0 = 0 is true in many schools; we put a lot of talk and energy into bad ideas and the results, in the long run, make little difference.

This book need not be used in the sequence written; indeed, if the reader is reasonably aware of technological advances and other factors shaping the future s/he may ignore the early chapters and consider those sections (Chapters IV, V, and XI) which plot strategies for nurturing sufficient personal and group interest in the topics of the future. From the strategies suggested, personal energies can be drawn upon to foster action. Or, going one step further, a group of people may be ready to try pilot programs in their schools based upon findings from their studies. In this case, the third section of the book (Chapters VI, VII, and IX) will be most helpful.

The final chapter of the book calls attention to readings, media materials, human resources, and school district sites where the focus is on the future. This section should be especially useful for the avid learner who wishes to go into greater depth than the synthesized and summarized writings in this book.

JLO

CHAPTER I -- WHY STUDY THE FUTURE?

Many people are so caught up in today they are either unwilling or unable to consider tomorrow. But why should we consider tomorrow? As with other trends in education and such associated magic words as flexible scheduling, cognitive domain, team teaching, and differentiated staffing, the band wagon syndrome seems to be operating again, identified by the phase "futures study."

Educators may have a greater responsibility to meet future challenges than other poeple in our society. O. W. Markley, a social psychologist associated with the Stanford Research Institute, has suggested two special reasons educators must anticipate the future:

- We need to educate our clientele in ways that will be useful to them when they leave our schools
- We need to educate ourselves and our students so that society can bring a better future into being.

People who are gravely concerned about the present--which is to say, most of us--often feel a sense of despair and impotence about the days ahead. Never mind the future, some of us seem to think; things aren't all that great right now. A short time ago in Florida 300 persons screamed obscenities and threw rocks at police as they rescued a potential suicide victim from a 150-foot water tower. How closely this spontaneous event matches the general posture of our society is hard to say, but an increasing number of similar events are being reported.

The Nature of the Problem

Our society is complex, interdependent, and firmly attached to technology on a massive scale. Too often the events which affect our lives appear remote, impenetrable, and unyielding to human intervention. Sometimes it seems only acts of gods can rectify the tail-spin. But still, some people are grappling with the problems. Two or three times a week in the San Francisco area groups of serious and intelligent people assemble for lessons in how to cope with what they believe is the approaching collapse of the Western economy. Hugh Marten, a psychologist and financial wizard, suggests steps to take when the cities are torn with rioting and when food and medical supplies are in short supply. "There are innumerable forces surging through the economy today," Marten says, "all of which point toward castastrophe. The country faces the prospect of necessary inflation, depression, or some ghastly combination of both."

Even if the financial emergencies are solved, other problems are waiting in the wings--the population explosion, energy depletion, irreversible pollution damage to the environment, unexplained changes in weather patterns, approaching limits of arable land, shortages of fertilizer, exhaustion of mined resources and other crises which come under the general heading "limits of growth." These crises are part of the here and now; they are upon us with an urgency never before known. We have at least three alternative courses of action: ignore the situation; urge people to look squarely at the situation and become absolutely terrified; or begin a systematic study of the future and take action to control our destiny.

The first alternative is unacceptable. The second is unattractive, although some of the doomsayers have a strong argument for this route when they point out that panic produces the energy which helps people to act. They may be correct, but I would prefer to take a more calculated look at what has happened, what is happening and what might happen, and then act with greater certainty. Most people do not respond suitably when in a state of paranoia. This book, then, has been written with the third alternative in mind. Pragmatic futuristics assumes that rational people can influence solid change.

People at all levels of life are concerned about the future. A Select Committee of the U.S. House of Representatives met recently to hear testimony from learned scholars and political scientists. Charles Williams and Willis Harman joined political scientist Victor Ferkiss in presenting thoughts on possible changes and modifications in cultural and social institutions in what they described as the "post-industrial age." Their major points had to do with the magnitude of disruption which could be caused by present and future policy decisions. Without being overly dramatic, the three emphasized how increasingly difficult it will become to solve the problems encumbering present social, political and economic systems. Clearly, the study of the future, as conceptualized here, is not a science consisting of ready-made answers. Future study is the beginning of a science, helping people develop attitudes and abilities to function not as followers of culture change but as agents of grassroots change. One development which futurists might instigate is to have technology become subservient to cultural goals.

This philosophical advance is a large order. In this case, though, the prophetic words of James Baldwin may apply: "Facing charge is difficult, but nothing can be changed if it isn't faced."

Change and the Educator

Can educators take the lead in the kind of major undertaking that has been described? Do we have the necessary time, energy and talents? I think so. Our efforts will be in vain, however, if we look for more efficient means to do things that need not be done. We must discipline ourselves to keep on target.

This statement, if taken to heart, will require quite a turnaround in some of the positions taken by many educators. The stereotype of the educator, as generated by the Research Division of the National Education Association, is a person who does "outside reading" by thumbing through Reader's Digest. This is not the type of reading required for obtaining new knowledge, attitudes and skills. Few educators, according to the NEA study, read medical journals, technological reports or other materials outside their vocational and enjoyment areas. It seems reasonable to expect educators to normally gravitate toward materials of their personal interest, such as educational magazines and articles; unfortunatly, most publications of this sort are limited in their coverage of other fields. A large percentage of college graduates, in fact, fail to read more than one book per year--hardly a way to stay informed. Can this be changed? Educators, in general, will need to be far more aware of the world around them if they are to help others make significant changes.

Educators specifically and people generally typically try to bring about change by figuring out things for other people to do. Educators are well aware of the facetious, but true, story of superintendents who attend conferences so they can go home and change principals; about principals who go to conferences only to return with the idea in mind of changing department chairpersons; about department chairpersons who want to change teachers; and so forth up and down the line. Real change begins when the individual is willing to start with himself or herself. As one might expect, this is the most difficult commitment to make.

The dogmatic denial of change as evidenced in some quarters occurs because some critics claim futurists lack scientific rigor in their studies; surely scientific rigor needs to be developed although we must not mistake rigor for *rigidity*. An emphasis on rigorous reality testing is necessary, but the criteria for "reality" should not be too narrow. There is a tendency, among those who have a blind faith in the established form of science, to reject as unreal those phenomena which can not yet be explained by our present level of science. For example, emotions and feelings are considered unreal by some scientific-types who define reality as quantities measurable by laboratory instruments. Extrasensory perception is considered *a priori* nonexistent by those who limit perception to events which are observed in known physical forms. Unidentified flying objects are explained as hallucinations by those who limit flying objects to birds and man-made machines. The history of science is replete with examples of discoveries which necessitated revisions of previously held truths.

Little in this book will focus on the UFO matter, although that in itself is a fascinating topic--one which causes even the sharpest of critics to acknowledge that some very strange incidents point strongly in the direction of extraterrestial beings. Slick magazines, most newspapers and general conversation have enlightened many people concerning certain possibilities in this regard. Some very rigorous scientific principles of investigation have been and are being applied to the study of these phenomena. For this reason I am making little attempt to give the subject coverage here.

One chapter in this book is devoted to altered states of consciousness. Educators work directly with the brain, at least as we influence known cognitive processes, but so little attention is given in educational literature to the powers of the brain that a more expanded view seems pertinent. The review I offer points out what we don't know about some areas that we should explore because of their implications for education.

Rollo May, author of *The Courage to Create*, suggests that people need four kinds of courage to help shape the future. The first is physical courage of a kind expressed neither in violence nor in a struggle for egocentric power over others. This type of physical courage supports the use of the body not for the development of muscle, but for the cultivation of sensitivity. A second kind of courage is the moral courage to become involved. The most prevalent form of cowardice in our day, says May, is expressed in the statement, "I did not want to become involved." The third type of courage is social courage. This has to do with relating to other human beings, the capacity to open oneself in the hope of achieving meaningful intimacy--the choice of devoting oneself over a period of time to a relationship that will demand increasing openness.

This brings us to the most important type of courage--what May calls creative courage--the ability to discover new forms, new symbols and new patterns which enhance a new society. Like other futurists, he implores educators to live with a sensitivity that will permit them to act in an age of limbo, to act in a way to make sense of the nonsensical. Living with ambiguity is a prerequisite for innovative educators.

In every era and every place, people have fashioned cultures and societies as individuals working collectively arrived at convictions about what things should or should not be. They came, indeed, to realize that things could be changed. While there is still some debate about the issues, some progress has been made toward the realization that people with skin colors different from ours aren't second-class citizens, that people with little money still deserve the right to personal dignity and that minorities can command respect. These changes have come about through socially accepted avenues and in other ways when the situation seemed to call for alternative action. People with plans and proposals, as well as the will and courage to sweat and take risks, can change a faint vision into a practical, working reality.

To imagine, to daydream, to envision--therein lies much of the leverage on the future which is at the disposal of every person in every generation. The future can be a positive dream or a nightmare; our challenge is to decide whether to permit the explosion of a multi-megaton bomb or to devise a calculated plan to defuse the future.

Trends Under Way

There is a clear trend at the present time toward zero population growth in almost all countries--with the exception, perhaps, of some of the newly developing nations. As far as U.S. schools are concerned, the trend is already observable as enrollments continue to decline. With fewer students attending school, obvious consequences follow; for example, some schools have been closed and teachers and administrators have been laid off or transferred to other schools. Nevertheless, teacher education institutions are continuing to graduate masses of qualified teachers. Few training institutions have been responsive to the fact supply is exceeding demand.

The point is simply that the trends which will affect our future, at least many of them, are already here. We don't need to conjure up wild, mystical illusions; our future is ahead of us in time, but it will obviously be influenced by factors that are with us today. In an article for Thrust magazine, Markley has called attention to some pertinent educational issues related to new developments in the field. He illustrated highly probable, reasonably probable as well as some conceivable notions.

I. Highly Probable/Almost Certain

Declining enrollments, unused facilities and staff layoffs--unless the structure/function of public education is reorganized and expanded.

Financial squeeze; nonpassage of bond issues and tax overrides; rising costs with declining income.

Increasing unionism--possibly including administrators and university professors--with public school collective bargaining virtually accomplished on a state-wide basis.

Emphasis on software (programming, conceptual aspects) rather than hardware (equipment) in educational technology; broadened credit certification of students (GED high school equivalence test, credit for outside experience, and so forth).

II. Reasonably Probable

Multidisciplinary community consortia for awarding credential of noneducator experts; requirement of renewal of credentials; question of credentials for publicly supported "non-traditional" education.

Recurring education (on again--off again full- and part-time study, K(indergarten) to D(eath).

Emphasis on "out of school" experiences as an essential part of education, the school being broker, expediter and overseer to facilitate this process.

Conflict regarding "stimulus control" (control by others) versus "respondent control" (control by self) in potent new sociotechnologies and psychotechnologies as used in public schools.

III. Conceivable

Year-round schooling to save money and make education more effective.

Reversal of the seniority aspect of tenure laws as applied by layoffs (due because of lawsuits based on equal opportunity considerations)--quality/effectiveness being used instead.

Educational voucher system, allowing students/parents to choose public or private schools or other ways of accomplishing education.

Markley has helped call attention to some critical items. However, he is conservative in his projections; we will see far greater adjustments than those which he describes. For example, one item in the "Probable" list is recurring education from kindergarten to death. This learning spectrum should include that period of time from womb to tomb. I believe we will soon begin working with children much earlier in their lifetimes, following demonstrated examples of accomplishment such as those achieved by Burton White and his colleagues in Brookline, Massachusetts. Here a medical and educational staff works with children beginning at 10 months of age--and up through the regular school years. The evidence of success which they offer is persuasive, and attention to early childhood education seems bound to expand. Among the many reasons are these:

- Poor nutrition at a young age may dull children for life. Therefore, prevention is needed rather than remediation.
- With more women joining the work force, or at least changing the historical role of the woman as the housekeeper, other environments for young children will need to be found.

- With fewer jobs available for educators at the regular levels, one reasonable alternative is to find more demand by creating more children to educate, that is, begin with the much younger children.

- Some home environments provide minimal opportunities for beginning language development.

- Before jumping to any conclusions, however, let me point out that opponents argue that children are already beginning with formalized learning too early and the age at which children enter school should be changed from 6 to around 9. While there may be no single right answer, we ought to begin sending up some trial balloons in both directions to see if either alternative makes any appreciable difference.

Our Evolving Society

We are at a point in time--as all people have been--when the future is colliding with today. Children in school face an even more perplexing time than did their parents because of an increasing rate of change. For example, they are living at a time when men have walked on the moon, but this phenomenon is accompanied by other subtle but often more pervasive conditions: the number of apartments has surpassed the number of houses; large city telephone directories change by more than a third of the entries each year; classmates change frequently; families move more often; more people watch more "live" events than ever before; songs, heroes and heroines come and go with the seasons; few things last.

Most people realize that coping with change will not be easy. If not for ourselves, then, we have a responsibility to prepare our students for the future. Magoroh Maruyama in the article titled, "Toward Human Futuristics" written for the Ad Hoc "Think Tank" and the Ad Hoc Metropolitan Planning Branch of the Diocese of California, wrote succinctly and provacatively by synthesizing what are called the major discrepancies in our society. These were simplistically identified as:

Competition vs. sharing
Technocentric transgression vs. harmony of nature
Material efficiency vs. nonhierarchial mutualism
Concept of leadership vs. interactionism
Majority rule vs. consensus or separatism
Homogenization vs. pluralism

Many readers would be hard pressed to argue loud and long for the first item of each pair at this stage in our evolution as a society--and what makes the matter so difficult is the realization that there has been a shift to the second item at a time when we have worked so hard to accomplish the first goals.

Perhaps we are indeed at a time of restructuring, a time when it is possible to make what John Platt calls a "quantum jump" to a sudden social restructuring. He declares this is possible when an increasing number of incongruencies generates emerging patterns within the old structure. According to his model, in the beginning the occasional incipient new elements are dismissed as deviants or temporary irregularities, but gradually the incongruent elements grow in number and are found everywhere. Over time, the obsolescence of the old system comes to be recognized as fundamental, and eventually the other parts snap into shape, causing new relationships. He says the time of restructuring is unpredictable, but when it does come it is like lightning. Have we arrived at that hour? Do we have any recourse?

CHAPTER II -- THE VIEW AHEAD

The more recent accomplishments of the human race hint at the realities to come. Perhaps an examination of some of these technological advances will emphasize the need for a "game plan" for coping in the coming years.

To think realistically about these phenomena, it helps to see our country in its relation with the rest of the world. Since the days our forefathers decided we should become an independent nation, our differences with other countries have continued to multiply. A report from the Eli Lilly Company describes in brief how others see us:

> "If all the people in the world could be reduced proportionately into a theoretical town of 1,000 people, the picture would look something like this. In this town, there would be 60 Americans, with the remainder of the world represented by 940 persons. This is the proportion of the population of the United States to the population of the world, 60 to 940.
>
> "The 60 Americans would have half the income of the entire town with the other 940 dividing the other half.
>
> "About 330 people in the town would be classified Christian; 670 would not.
>
> "At least 80 townspeople would be practicing Communists, and 370 others would be under Communist domination.
>
> "White people would total 303 with 697 non-white.
>
> "The 60 Americans would have an average life expectancy of 70 years, the other 940 less than 40 years on the average.
>
> "The 60 Americans would have 15 times as many possessions per person as the rest of the people.
>
> "The Americans would produce 16 percent of the town's food supply. Although they eat 72 calories above the maximum food requirements, they would either eat most of what they grow, or store it for their own future use at an enormous cost. Since most of the 940 non-Americans in the town would be hungry most of the time, it would create some ill feelings toward the 60 Americans who would appear to be enormously rich and fed to the point of sheer disbelief by the great majority of townspeople . . .
>
> "The Americans would also have a disproportionate share of electric power, fuel, steel and general equipment.
>
> "Of the 940 non-Americans, 200 would have malaria, and three would have leprosy. Forty-five would die from malaria, cholera, typhus, and malnutrition. None of the 60 Americans would ever get these diseases or probably ever be worried about them."

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The possibility and probability that people in other countries look upon us with envy seldom occurs to us. This same feeling is often aroused in our own country as the have-nots look around at those who seem to have so much but care so little. Perhaps by recognizing the differences which already exist, and those which are likely to come about in the next three decades, we can push aside the blinders which have caused us to follow a fairly narrow path.

Ever since the Vietnam War debacle, there seems to be a movement toward American isolationism rather than a movement toward establishing a cooperative and collaborative relationship with other countries of the world. Money is not the answer. We need to unleash the creative and imaginative minds of people rather than bank notes to get at the national and international issues.

Before we can focus on the broad areas of the future, we need to know of the startling changes and innovations that are taking place today. These phenomena and how we deal with them will shape the coming decades.

The New View of the Public Servant

Startling change has taken place in our attitude toward the folk heroes of yesterday, including the public servants--the policeperson, the fireperson and the doctor. These people were once considered to be noble, stalwart, selfless individuals totally committed to vital, life-related services. Now the bubble has burst! The news media are reporting events such as these:

- Police have gone on strike in San Francisco, Baltimore and New York; firefighters in Berkeley, Santa Barbara and Kansas City have taken to the pavements; and doctors in San Francisco, Los Angeles and New York City have demonstrated their strength in opposition to alleged difficulties.
- Police and firefighter organizations have grown much more militant--even political and polemical. In Berkeley, striking firepersons rang most of the town's doorbells in an unprecedented effort at publicizing their grievances.
- Young doctors and interns in residence in public and private hospitals have formed a national labor union to organize, bargain collectively and, if need be, strike.

Clearly, the lovable and love-dispensing servants have changed their public image; even teachers have come very close to adopting the tactics described here. While the faces may change, the scenario is essentially the same. This is not the forum to debate whether or not these changes should occur; the fact is, the changes are here.

Conference by Network

Even the conference procedure is changing. A special computer project called "network conferencing" enables a widely scattered community of people to share ideas, exchange data and make group decisions. The possibilities are fascinating. No longer do hundreds of educators have to go to various conference sites; the network conference system allows people to stay home, participating in the conference by keying into pertinent parts of the program via the computer. This system accepts and projects both visual and printed forms. With remote terminals at locations throughout the country, people can ask questions and obtain feedback. The computer retains data over time, enabling the indivudual to get into and out of the system at any point.

Jacque Vallee is the research fellow who directs the design and implementation of the conferencing network. A graduate of the Sorbonne and Northwestern University, he brings many ideas to the system--some have far-reaching potential for the political functioning of our country. Imagine, for a moment, that it is possible to put a remote terminal into every American home; information on almost any political issue would be immediately available. Imagine further that registered voters desired a more direct voice in the operation of government. Might it be possible to revive the idea of the New England Forum by having everyone in the United States vote through the computer--rather than relying on our present system? Might it be possible to eliminate the middle persons, the politicians. Citizens could provide their own first-hand advocacy on the different issues. The hardware needed to try the idea is already available. The prototype has already been demonstrated and the economic feasibility of the approach is improving. The prospect generates all kinds of pros and cons, and it is fun to wonder what the politicians may do if they are expected to deal face-to-face with people rather than remain insulated from the public in Washington or in the state capitols. Local school boards, city planning commissions and other governance agencies might adopt the same system.

Innovations in Energy

Within the past decade, most of us old enough to drive cars or to fly airplanes have been inconvenienced more than once by long lines waiting to get gas tanks filled. The term "energy crisis" may be a misnomer, but the recent unavailability of fuel when the lines were long caused a general, immediate awareness of a problem the Club of Rome (a futurist group) had projected as early as the mid-1930's.

In any case, it finally became clear that the world's energy-producing resources are not infinite; consequently, other alternatives are being examined. One alternative is the experimental energy producing "solar pond" at the University of California's Lawrence Laboratory in Livermore, California. Chief of the project is William Dickinson, a physicist who switched from studies of the nuclear atom to interests involving the sun and the combination of factors necessary to produce solar energy.

A number of roof-top solar ponds are already providing hot water and heat; the viability of larger sources is difficult to assess. Dickinson does estimate that in the Southwest, where the sun shines almost everyday, a simple solar generating system could produce enough energy for 10,000 kilowatts of reasonably priced electricity through an array of 1,600 ponds covering about 320 acres of land. Some solar strategists have envisioned the flooding of large areas of unused desert to help with the energy producing experiments. Dickinson believes tests are not far enough along at this time to warrant such action. While the idea sounds sensible, there are obvious problems: what to do about evaporation, what to do when the level of humidity increases and so forth.

There are already takers, though, for the Dickinson techniques. The Sohio Petroleum Company of Cleveland, an operator of uranium mines in the Southwest, has contracted with the Livermore research team to help build two trial systems of solar ponds at the company's mines near Grants, New Mexico, and to help build a full-scale, six-acre system in 1977. With six acres of plastic, a little water and a lot of sunshine, Livermore scientists believe they can build a solar energy system that might save industries thousands of hours of operation with scarce and costly fuel oil. This development has considerable potential for the future.

Medical Advances

Medicine has made remarkable advance in organ transplant processes, but even more incredible discoveries are imminent. For example, a mechanical heart is a tantalizing and feasible goal. Already small calves have been kept alive for several days with artificial hearts powered electrically from the outside. Artificial hearts would have at least two advantages over human heart transplantation: with an artificial heart, there would be no need to wait for a suitable donor and the problem of rejection due to introducing foreign tissue would be eliminated. Since heart disease is by far the leading killer, even greater than cancer, an artificial heart would provide obvious relief from an alarming death rate.

Less dramatic, perhaps, are the new artificial joints which have aided so many victims of rheumatoid arthritis. Dr. Theodore Waugh, professor of surgery at the College of Medicine (University of California, Irvine), developed two such important orthopedic devices. The joints are made of an alloy of chromium and cobalt, and while the implant of the joint is not 100 percent successful, the degree of improvement in most cases is exceptional. At least one man who was once totally immobilized is now taking up tennis. Even though the joints are relatively new, over 5,000 persons in the United States and Europe have already undergone the operation.

Genetic Breakthroughs

The control of genes is dramatized in the sequence in the film Future Shock, in which the man and woman shop through a supermarket of genes to obtain those characteristics which they think important for the child they expect to have. Can we program into existence high I.Q.'s, years of life-expectancy, body types, and perhaps even skin color?

Scientists have been able to control the gene structure of lower order animals through a variety of processes. One such process is called cloning. It is now possible, for instance, to mate two frogs, controling the genes in one so that all frogs produced are exact replicas of the frog for which the genes were uncontrolled. Those working on this type of genetic study believe it is only a matter of time until the same process is possible with humans.

Cloning is only one technique for designing and/or structuring the human being; another avenue is genetic surgery. This technique adds, removes or substitutes genes to the initial architectural design. In experiments with mice, scientists have added healthy new genes to defective cells; the new genes not only correct enzyme deficiencies in the cells, but the new cells are duplicated when the healthy cells begin to divide. It is now possible, in principle, to remove defective cells from a human patient, to introduce new genes and to replace the "cured" cells in the patient. Conceivably, this may cure certain kinds of cancer.

Theoretically, genetic engineering could also bring to this earth a mixture of man and animal heretofore found only in myths: the Minotaur, the Centaur and the Gorgons. Should it be possible to produce man-animal combinations, the six million dollar man could be around the corner. Person-machine combinations may also one day be possible.

Some evidence indicates that an extra Y chromosome in a gene causes a predisposition toward aggressive behavior; if it becomes possible to remove or alter the Y chromosome, individuals's aggressive tendencies may be reduced. Considering the tremendous increase in crime and violence in our country, perhaps this is one potential for removing or reducing some problems.

The prospect of eliminating physical disabilities and mental and criminal insanity through genetic engineering modifications is a strong support for continued research. Should such alterations be made?

Who decides if we should or should not have gene banks? Is it possible that we will need to have greater, centralized control by government to protect individual freedoms?

In short, genetic engineering is on the brink of revolutionizing the traditional concepts of man, God and creation, at least according to Caryl Rivers' article in an issue of Scientific Review. The moral issues raised by genetic engineering are no longer speculative; they need to be faced as practical realities. The arguments on both sides of the issue are powerful. We can, on the one hand, argue for halting scientific investigations (but science is too important to humankind to be stopped) or, on the other hand, permitting discoveries to come as fast as possible (but technology has already outpaced our wisdom).

These moral questions have divided the scientific community. To help resolve these questions, scientists have established what is called the Institute of Society, Ethics and the Life Sciences. Rivers has described the debates at the Institute by using the analogy of two prisoners inside a jail. When one looked outside he saw the mud; when the other looked outside he saw the stars. Either view is possible. But if military issues are too important to leave to the military, and education is too important to leave totally to educators, it follows that many of the scientific processes are too important to leave solely to scientists.

While a senator, Vice-President Walter Mondale proposed that a 15-person presidential commission spend two years looking into the moral problems posed by the life sciences. The commission was approved by the Senate, but the bill has been lodged in a House committee. Isaac Asimov, biochemist and science fiction writer, offers sound counsel by suggesting we should intervene if we have reasonable suspicion we can do so wisely. "If our choice is doing nothing or doing something without knowing, we should do nothing," says Asimov.

Human Fertilization

Time was when the fertilization of a human ovum was looked upon as a miracle controlled by God (or a God-like power), an awesome event, the process scarcely understood by mortals. This position is challenged today by scholars and medical experts. Methods have been developed to produce proxy mothers, either by creating artificial wombs outside the mother or by having a child conceived in one woman and then implanting the embryo into another. This is usually done for women who have had difficulty conceiving. Pope John XXIII identified the relegious implications of this work for the Catholic church when he spoke out against the work of Dr. Daniel Petrucci. Working at the University of Bologna in 1961, the doctor had fertilized an egg in intro (outside the womb) and the embryo lived for twenty-nine days. The Pope did not believe the doctor was working in an appropriate area of study.

On one side of the issue are those who believe the reproductive process should be willed, chosen, purposeful and controlled--and they argue that while coital reproduction may be more fun, there should be a clear distinction between baby-making and love-making. These individuals argue that both practices become more human because they are not left to chance. Conception by chance, viewed from both a humanistic and moralistic perspective, is seen as genetic roulette.

A counter-argument is given by the executive director of the Committee on the Life Sciences and Social Policy for the National Academy of Sciences, Leon Kass. He suggests that one can purchase quality control of the product only by the depersonalization of the process, and this depersonalization removes the mystery of nature that joins the pleasure of sex, the communication of love, and the desire for children in the chain of events which promotes human existence. Neither argument has as yet been discredited, and scientists seem to be using the amber light approach; they are proceeding with extreme caution.

Indeed, some researchers have been on the verge of remarkable discoveries only to have their consciences cause them to draw back. Two such studies were terminated recently at Stanford University--one having to do with work on the life-giving process of DNA and the other with an artificial embryo reproductive model. These researchers said, "enough," but one can only imagine that others will pick up--sooner or later--where these individuals stopped. George Wald, a Nobel Laureate at Harvard, has spoken out on a wide range of social issues; he predicts that we will soon have to choose whether we want our technology to give us more reliable, efficient and convenient people, or whether we want to keep our freedom and individuality.

The Interests of Scientists

No matter what position the scientists take in their rhetoric and in the slick articles proliferating in print, their 1974 AAAS Conference suggests where their interests lie. The theme of the conference was Science: Challenges of Today--Outlook for the Future. Some of the areas examined were as follows:

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- The utility of biological systems
    - Health
        - Studies of depressive illness
        - Extrafamily child care
        - Liquid crystals in living systems
    - Behavior
        - Unerobiological mechanisms of adaptation behavior
        - Brain function for speech
    - Living world
        - Western forest ecosystems
        - Biological control of population
- Changing methods of communication
    - Artificial intelligence research
    - Electron microcopy
    - Science and public policy
        - The ethnography of power
        - Institutions and society's problems
        - Science and international politics
    - The social context of science--processes and needs
        - Environmental education
        - Transition to limited growth
        - The world of 1994
        - Anthropology in the 1990's: conditions, needs, prospects
- Environment and science in transition
    - Lake Powell and Lake Tahoe in transition
    - The San Francisco Bay Area--looking toward the 1990's
    - Water policies on U.S. irrigated land
- Energy and society
    - Fusion power
    - Energy and agriculture
    - Scientists and the energy crises
- Physical universe
    - Particle physics
    - Cosmic evolution
    - Extraterrestial life
    - Skylab science experiments: a first report

This abbreviated list suggests that we educators should bypass some of our traditional meetings where we often chase ideas about the past or about subjects which have been beaten into the ground and substitute the AMA or the AAAS conferences.

General Trends

Up to this point, we have elaborated on a few isolated areas of swift change. We will now examine several general areas of interest and the developments that seem likely to occur; these are summarized from careful studies at two institutes for the future: the Institute for the Future on the West Coast and Kahn's Center on the East Coast. We will then discuss the developments which have implications for society in general and education in particular. If any of the projections come true, what real differences, if any, will they make? And will these differences have any influence on the role of the school--or will the schools have any influence on the changes?

Value Changes

Dissatisfaction with the inequities in society will increase. These inequities include, for example, the poverty gap and differences in health delivery systems as well as educational opportunities.

Society will recognize the fact that progress has costs, monetary as well as environmental and human, and that progress for its own sake or for economic gain may no longer be totally acceptable.

Profits no longer can be used to justify business actions which impinge on the public interest.

The Protestant work ethic may no longer hold; work in the public interest may be better than work for economic gain.

Urbanization

Housing and zoning will continue to be key issues.

Disorder and disequilibrium will increase due to urbanization.

New methods of financing will become necessary for local governments to advance a variety of programs for dealing with critical urban problems.

Elementary education in large urban areas will be decentralized.

The federal government will develop and implement a national policy to deal with urban growth, including a strong "new town" policy.

The Family

The family will increasingly become a "leisure-activity unit."

Nonfamily methods of rearing children will be developed and widely accepted. In the 1980's, child care may be viewed as a government responsibility. This will free women to return to work shortly after delivery.

A strong trend toward schemes similar to social security, begun at birth and providing services to children, (irrespective of the parents' economic position), will occur in the 1980's.

The educational system may find itself seriously overburdened by assuming the expanding range of social commitments previously handled by the family.

Leisure and the Economy

Second careers, travel and community service will keep life meaningful for the elderly, thus reducing the risk of their increased alienation from society. This trend should become quite strong in the 1980's.

Endeavors which are not economically productive but are socially beneficial will be appreciated and rewarded.

Employee benefits may include profit sharing, employee retraining as part of severance benefits, custodial care, optional retirement at age 55, flexible working periods and more time off for socially desirable pursuits.

Education

Education will begin earlier and continue longer, with less sharply defined termination.

Private schools, aided by government subsidies to parents for sending their children to schools of their choice, will flourish.

In many schools, grades and credits will not be given; students will be evaluated by independent testing agencies. This trend will begin to increase in the last half of this decade.

Companies will take over the job of educating the employee's family members, particuarly in areas where below average school systems exist.

Food and Population

The transfer of people to less populated areas such as Africa, Canada, Australia, and Alaska may have to be considered.

Developments in the technology of planned genetics will economically improve caloric productivity per acre by a factor of five or so.

Agricultural irrigation and fertilization (possibly because of their deleterious side-effects) will be cut below 1968 levels. This trend will begin to increase in the last half of this decade and will continue to increase in the 1980's.

International Relations

The ability of the superpowers to exercise their full military might is progressively diminishing; economic strength will be the basis for international power and influence.

The United States will tend to withdraw from world affairs and to create a "fortress" protected by ABM defenses ready for retaliation. This trend will increase in strength until about 1980, when it will begin to diminish.

Present problems in the United States are weakening our international situation and will encourage aggression; this will lead to counter-activism and thus, through a negative feedback process, reestablish internal consensus. This trend will probably diminish in the 1980's.

Currency will be denationalized.

Conflict in Society: Law Enforcement

The build-up of internal conflict between the New Left and the New Right may result in a massive law-and-order movement. This may occur in the 70's.

The blacks will win their struggle for recognition over the next twenty years.

We probably will see the appointment of stricter and less sentimental judges at every level, as well as the amendment of certain federal and state court decisions which have made law enforcement more difficult.

Intensive community-based correctional programs will increase.

Police forces will take advantage of new technologies. For example, new police communication services will be developed. Police persons will never be out of communication with the police station, and they could have entire conversations with suspects monitored and recorded. Search warrants could be transmitted electronically by facsimile.

Institutions

Business will be transacted without money or checks.

Within ten years, thirty cents out of every investment dollar in manufacturing will be spent for automated machinery and equipment.

The post-industrial society is likely to require an enormous expansion in learning, not necessarily through formal education.

Work itself will be organized for its value as education rather than education begin organized for its value to work.

Bio-Science

The problem of the body's rejection of organ transplants will be solved.

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A primitive form of artificial life, at least in the form of self-replicating molecules, will be created in the laboratory.

Artificial hearts with a power source of long duration will be implanted.

The human clone will be developed.

The aging process will be controlled chemically, extending the life span by fifty years with a commensurate increase in the number of vigorous years.

Behavioral Control

Cheap, non-narcotic drugs (other than alcohol) will produce specific changes in personality.

Drugs similar to LSD will heighten the perception and learning speed of retarded persons.

The use of brain surgery or psychochemicals to modify the behavior of criminals will be relatively widespread.

The use of drugs other than dietary supplements to raise the level of intelligence will be investigated.

Control of Environment

Automobile engines, fuels or accessories will operate without harmful exhaust fumes.

Regular and reliable weather forecasts fourteen days in advance for areas as small as 100 square miles will be possible.

Techniques for exploiting the ocean through aquaculture farming (including expanded fishing and ocean fish cultivation) will produce at least 20 percent of the world's calories.

Automation, Information and Communication

Automated language translators capable of coping with idiomatic syntactical complexities will be functioning on a laboratory basis.

Most Americans will carry portable, two-way communication devices.

3-D television will be used routinely for entertainment.

Complex robots will be marketed. These robots will be programmable, self-adaptive and capable of performing such household chores as preparing meals and cleaning or otherwise disposing of dishes.

No one knows how many of these projections will become reality; however, prototypes are already before us and efforts at full-scale production models will follow.

One of the best sources for a look at general aspects of the future comes from a publication put together by Theodore Gordon and Robert Ament for the Institute of the Future in Menlo Park, California. The title of the 100-page report is, 'Forecasts of Some Technological and Scientific Development and Their Societal Consequences". This report was prepared by means of futures analytic techniques, such as the Delphi cross-impact analysis and simulation, as well as the more traditional methods of physical and social science research.

Using the Delphi approach, those conducting the study drew upon personnel from the following fields: Aerospace, Agriculture, Bacteriology, Biochemistry, Brain Physiology, Computer Sciences, Cytogenetics, Electron Physics, Engineering, Finance, Genetics, Gerontology, History of Science, Industrialization, Manufacturing, Mathematics, Microbiology, Molecular biology, Natural resources, Pediatrics, Philosophy, Psychiatry, Public administration, Science Journalism, and Transporation. Representatives worked through a series of four questionnaires, responding to twenty biological and twenty physical development questions such as the following: When might these events occur? What other developments would you add? What is your level of expertise regarding each item? What major technological and societal consequences may result? In addition, participants were asked to judge the likelihood that a particular event would occur:

- list both threatening and desirable items; and
- suggest ways to circumvent or promote items in the list.

A consensus emerged. The following events were judged likely to develop:

Cheap drugs (other than alcohol and narcotics) will produce specific changes in such personality characteristics as euphoria, anxiety, aggression, perception, and attention.

A primitive form of artificial life (at least in the form of self-replicating-molecules) will be created in the laboratory.

A biochemical process to stimulate the growth of new organs and limbs will be demonstrated.

A man-machine symbiosis, enabling man to extend intelligence by direct electrochemical regeneration and to control certain phenotypes will be demonstrated.

The recording of direct information on the brain will be tested.

The freezing of the body to permit a form of time travel will be demonstrated.

A raceless people will be developed through interbreeding of fifty percent of the world's population.

The fact that most people have the latent capacity for genius, which fails to be realized through lack of motivation or cultural receptivity, will be proved.

One could become morbid about the future, but it is gratifying to note that those completing the study judged that twice as many potential consequences seemed to be favorable as unfavorable. And in every instance, the panelists felt there was a chance for expediting, delaying or avoiding a development. Some of the means for controlling the future are as imaginative and challenging as some of the new developments:

International agreements
New types of institutions
Financial incentives
Federal legislation
Increased military responsibility
New technologies
Legal action
New kinds of foreign policy
New research
Educational curricula
Scientists organized to exert political and social pressure
Dissemination of propaganda.

From an educator's perspective, the topic of changing educational curricula seems especially relevent, particularly at a time when the hue and cry is "back to basics" (as if we had ever left them). The projections in this area are not enlightened, although this may be the state of our art in comparison with some of the other fields of study. For instance, the panelists identified those changes in the educational curriculum that are likely to occur:

Use of human teachers to teach humanistic aspects of education; teaching machines reserved for information transfer

Establishment of programs which permit political leaders, industrialists, and others to record their thoughts for inclusion in later computer-controlled teaching machine programs

Establishment of better techniques for measuring educational attainment beyond simple monitoring of the transmittal of information to students

Beginning education, using machines, at ages 2 to 4 or earlier

Genetic education to promote desirable genotypes

Education in scientific humanism

The panelists anticipated that a substantial portion of education will be done by teaching machines. While no mention is made of the types of machines which will fit into the system, it seems reasonable that the machines will be greatly advanced over those that have been on the market the past two decades.

It is probable that biofeedback devices and television will be used rather than the Skinner boxes now used to a limited extent. One thing is certain about the use of teaching machines, the software is many times more important than the hardware. Good software does not seem to be flooding the bookstores.

In summary, then, developments for the future can be grouped under the following headings:

> Development of biomedical techniques to provide increasing control over disease, aging and reproduction
>
> Development of techniques which permit the general use of automation and computers
>
> Development of techniques which offer improved and more precise control over the environment
>
> Development of techniques necessary for further exploration of space, both inner (the mind) and outer.

Education is often considered to be the vehicle for bringing about a change in behavior; therefore, it is interesting to note what those on the future panel anticipated in the field of behavior modification. New methods of behavior control which stem from biological research will include the development and use of drugs similar to LSD to heighten the perception and learning speed of the retarded; the stimulation of cognitive growth to a maximum ability in preschool children; and brain surgery or psychochemicals for modifying the behavior of criminals. These forms of control, the panelists predict, will be accompanied by breakthroughs concerning the understanding of human behavior and motivation.

CHAPTER III -- MIND OVER MATTER

Most of the so-called advancements in the preceding chapter were technological in nature. Our greatest achievements in the next fewyears, however, will not be in outward manifestations; indeed, the greatest achievements will occur in "inner space," i.e. the mind and its mental states.

Over the years, philosophers and scholars have had long debates about inner space and the anatomical structure which influences a person's behavior. While the argument has not once and for all been settled, the brain is credited with the greatest influence on personal behavior, at least for the time being.

Most people agree the brain is incredibly fascinating and enchantingly mystical.

Indeed, an abundance of research supports the claim that learning is often determined on the basis of the effective functioning of the brain's various components. When an injury occurs in a particular part of the brain or when a specific spot is stimulated by an electric impulse, some other part of the body is likely to respond. Many studies have shown that the physiological arrangement of the brain determines in some way a gross relationship between the academic and fine arts areas, for example, left and right spheres of the brain.

As important as the brain is, many in education admit that one's functioning and performance in school is probably adjusted to the lowest possible cognitive level, that is, recall. The recall mode of functioning occurs primarily in the awake state, but many of the performances of our brain take place at a time when we are asleep or when we are in an altered state of consciousness.

Altered states have been recognized since the early days of civilization, but only recently have we begun to study the subject seriously. We can now identify, observe and control some of the altered states. By no means have we arrived at complete understanding, but now that we are cognizant of the altered states, the subject has been legitimized.

Many areas surrounding the study of the mind may have tremendous ramifications for education. However, the unknown and, therefore, mystical aspects of altered states of consciousness leave many people dubious. It is probably too early to build specific programs into the schools, but it is not too early to examine some of the psychic phenomena possibilities.

Hypnosis

Most people are familar with the altered state of consciousness called hypnosis. For years considered a form of entertainment, hypnosis is being studied today for therapeutic possibilities. At Stanford University, Josephine and Ernest Hilgard, for instance, are working on techniques of self-hypnosis to be used by burn victims, cancer patients or drug addicts.

Rather than drug the patient heavily to prevent pain, researchers are using self-hypnosis to blot out the pain and to help the patient perform in a reasonably normal fashion. The problem is still there, but the pain is reduced significantly.

The Hilgards have made some remarkable discoveries which support the altered states of consciousness thesis. One example of this is found in their discussion with patients concerning their reaction to self-hypnosis. When conversing after hypnosis, the patient normally tells the doctors the pain was reduced. If the doctors, however, ask the patient to describe the pain through an alter ego, as it were, another part of the mind (a different level of consciousness) can describe quite clearly the level of pain.

Extrasensory Perception

Researchers at the Stanford Research Institute have found significant correlation regarding similar inventions occurring almost simultaneously in various parts of the world. The timing, they believe, has to do with extrasensory transmissions of messages by people who concentrate on the problem at hand. Research in this area suggests that each person has a built-in transmitter and receiver, and that it is possible for one person to send messages to another, using much the same system as radio stations and home receivers. There is a real possibility that ESP is a learned process--that is, schools might be able to teach people how to use this level of consciousness. Wonder how grades would be affected if students could use ESP?

In another study conducted at the SRI, some of the more consistent "transmitters" and "receivers" were segregated inside a lead vault to check the strength of signals. The transmissions and receptions cease when the signals must pass through the lead. Theoretically, then, ESP involves the electric or magnetic fields of energy within an individual's brain.

A few public schools have been able to launch specific curricular activities built upon what is known about ESP. Generally, the curriculum covers the three types of extrasensory perception: precognition (individuals are aware of things that will happen in the future); telepathy (information is transmitted to other people); and clairvoyance (being aware of information prior to the time an event occurs).

One reason why ESP research is so interesting is because its results are so out of the ordinary with other facts, while the anatomy of an individual can be studied much the way cars and computers are studied--straight forward. But the ESP data simply don't fit the regular scientific order of things--and therein lies its fascination. This is the reason for at least four types of investigations about ESP: laboratory experiments, spontaneous cases, mediumistic cases and psychotherapy cases. As new studies are made, it becomes evident that the philosophical legacy of the seventeenth century--the legacy on which Western culture is based--is no longer applicable _en toto_.

As ESP work has continued, at least three major breaks with what we call reality have been noted. Most of the sensitive participants and mediums have no sense of time when they are engaged in their extrasensory work; they also have no value judgment regarding good or bad (an event just _is_); without a value applied to it; and they seem to be in touch with the universe as a whole, rather than having the locus on _self_.

Over time, certain techniques have evolved to help individuals living in the sensory reality to attain some of the skills required to function in the clairvoyant reality. There are now techniques taught in some schools in courses with such descriptive titles as: astrology, numerology and I Ching. There is too much hard, scientific data to allow us to ignore how harmoniously some people perceive themselves within the universe--their perceptions may have fruitful implications for our educational systems.

Intuition

The state of consciousness about which we know least is, perhaps, intuition. The Western world has had a tendency to deprecate or renounce interest in intuition. Eastern and Far Eastern cultures, however, have long practiced specific types of energy forms such as Ki or Chi. Underlying the oriental martial arts of karate, judo and kung fu are principles which control the energy forces of the mind and body. Some investigators believe this type of energy can be controlled by people to help them with processes of intuition. In an interesting energy force demonstration, the procedure begins by having one person lift another three separate times. The first time the person being lifted merely relaxes; on the second attempt he or she thinks "up" and on the third occasion he or she thinks "down." In every instance in which I have been involved, the results of the thinking (energy force) can be felt. No one has been able to ascertain what, specifically, happens at the biological level, but something certainly does.

According to Robert Ornstein in the book The Psychology of Consciousness there are basically two modes of consciousness: one is analytic, the other holistic. Much of what we have explored in the United States, relative to the conscious, has been directed at the analyt[illegible] the rational part of homo sapiens rather than the intuitive side. The i[illegible]e side has been considered esoteric, and, therefore, to be avoided. N[illegible] climate in the United States is more conducive to the study of the [illegible]rational, non-verbal and less traditional modes of consciousness [illegible]ed legitmately--including Buddhism, Yoga and Safism.

Surgery, Drugs and Computers

Another way to bring about a different state of consciousness is through surgery. For instance, psychosurgery may benefit patients who are potentially violent. Of course, someone must give permission to perform such a dramatic operation. Who should decide? The patient? The doctor? A panel of experts? Would these persons be making judgments beyond their ability to act?

Drugs, too, as we have known for quite some time--whether the term "drugs" refers to coffee, aspirin, marijuana or LSD--cause different sets of responses in different people. In a criminal facility in Vacaville, California, a drug known as Anectine has been tested to ascertain its potential to suppress assaults and/or suicide attempts. This particular drug causes prolonged seizures of the respiratory system and muscular paralysis, and the patients who have tried it likened their reactions to dying. Of sixteen patients treated at Vacaville, only a small number consented in advance. One wonders what might happen if our insitutions were run by persons who do not care about the dignity of those incarcerated and administered drugs indiscriminately. Unfortunately, just enough of these foulcalls are reported in the public media to cause concern.

Certain drugs may have a use in education. Memory has been increased dramatically in mice with strychnine. Perromycin has the tendency to reduce memory (learning). Experiments with these drugs seem to indicate that at least in mice the learning of skills is more related to chemicals than to electrical circuits in parts of the brain. These discoveries were made after a series of surgical operations were performed on mice that had learned an intricate maze sequence. Even when over 90 percent of the cortex had been cut away from the mouse's brain, the animal seemed to remember the maze. With only slight injections of the appropriate drug, the mice quickly forgot previous learning.

Is it possible, then, that school children may--because of diet, certain glandular conditions and so on--be producing those chemicals which cause them to remember or to forget? If the answer to this is in the affirmative, does it seem possible that schools may someday have staff members who will decide when people ought to learn new things and forget other things? Is it possible that these same people would administer drugs to cause learning and unlearning?

There is discussion today of catastrophic events which may overtake us, for example, earthquakes, tornadoes, tidal waves, atomic explosions, famines and plagues. It would be a simple matter to issue pills with appropriate chemical composition to help those who are anxious about the future. (Some of us are certain to get the pills mixed up and take the "remember" pill when we should take the "forget" pill.)

The scientists concentrating on the affects of chemicals on memory have apparently narrowed the chemical substance down to a small chain of amino acids, $ACTH^{4-10}$.

Researchers seem destined to discover high-powered tools which can affect one's personal identify. These tools can be used positively or negatively--and this is exactly the reason guidelines for their use must be established. A close watch on the brain researchers must be maintained. In unfriendly or thoughtless heads, the high-powered tools could become instruments for terrifying society.

The possibility of man-computer combinations has been mentioned previously. Jose Delgado, a brain researcher in Spain, has been able to establish direct communication between the brain of a chimpanzee and a computer. Some major questions regarding learning have been opened. From as far back as Aristotle, learning has been assumed to depend on sensory impressions; that assumption is now seriously questioned. As a result of Delgado's work, the computer, apparently, was able to "teach" the brain without input from other senses.

Most educators are continuing to struggle with what we call differences in learning styles, but our thinking usually deals with visual or verbal alternatives. We aren't giving much attention to direct ties between the computer and the brain. One of the most profound concerns related to brain research is raised by Delgado. He has pointed out that at one time we followed the axiom, "Know thyself," but now we are moving into the direction of "Create thyself." Perhaps, for the first time, we are in a position to control or direct our own evolution. Should we be in this position?

At the Nueva Learning Center, we have for some time been aware that academic ability is not necessarily correlated with abilities in music and/or visual tasks, for example, art activities. While we observed this to be the case, we weren't certain why. Recent research with brain-damaged people has helped shed light on this matter. (Many researchers believe data about children's learning disabilities will come from studies of brain-damaged adults.) The value of the work with brain-damaged people derives from the fact they were once able to perform certain functions, that is, before they were injured. By locating the injured part of the brain, it is possible to ascertain what actions are controlled by that particular area.

Damaged brain tissue is unlike damaged tissue in other parts of the body; once brain tissue is destroyed, it is beyond repair. If certain actions are to be relearned, other channels must be used. Whether such rehabilitative measures will prove to be of value or of marginal assistance, the research is worth continuing.

Until more is learned about the influences of psychosurgery, drugs, and/or man-machine combinations, the lay person will need to accept a modest understanding of the brain. Certainly, few educators will have the chance to work with many of the techniques mentioned in earlier paragraphs, at least for some time.

Biofeedback

Biofeedback is now being tried in a few schools around the country. Those who use this technique believe it is possible to create a marriage between the mind and the body by using supporting equipment for conditioning responses. Through this marriage, the mind can be trained to perform certain functions, for example, reducing migraine headaches, increasing the blood flow to certain parts of the skin and lowering the heart rate. These phenomena allegedly happen because individuals are able to generate an increase in alpha brainwaves. What once were considered to be physiological functions beyond voluntary control can be influenced by learning techniques.

Biofeedback is one of the altered states of consciousness that can be tested against specific laboratory-acceptable criteria. This is one reason some schools have elected to give the approach a spot in the curriculum. Perhaps when other programs or processes have met similar evaluative criteria, other educators will be willing to consider pilot projects in their schools. The criteria against which biofeedback was judged included:

- Carefully controlled studies of patients suffering specific clinical problems, demonstrating that the effect of the biofeedback procedure was greater than the placebo effect.

- The changes that feedback therapy produced was of sufficient magnitude and duration to have clinical significance.

- The procedure was transferable from the laboratory to the normal, day-to-day environment.

- Finally, it was demonstrated that biofeedback training, once acquired, lasted long enough to be meaningful.

Thus far, biofeedback is primarily a technique used in therapy to combat pain. Now other researchers believe it has equal or greater application for the learning process, especially if the production of alpha waves can help relax an individual to the extent that other external stimuli can be received. One problem of learning is related to the hypothesis that there are so many stimuli competing for attention that some impulses simply can't get through to the nerve center.

Some critics believe the claims being made for biofeedback are exaggerated and that, in fact, the process works because people are helped to relax. Some experiments have tended to support the counter-claim. Whatever the reason, it seems certain that two facts are definite. Alpha waves can be produced, and relaxation is obvious when alpha brainwaves increase. One implication here for education is the possibility that elementary school children, rather than going out to the playground for games during recess (especially when they come back in more excited than when they went out), could be wired to the biofeedback machine to help them learn to relax. Such a situation would invite considerable feedback from the parents.

Meditation

This altered state of consciousness has been studied by more people looking at more variables than all of the other fields together--especially when one considers the subject of education. The meditative state given most attention is TM or Transcendental Meditation. Investigators have set up laboratory experiments looking at TM--

- relative to changes in the metabolic rate,
- relative to changes in skin resistance,
- relative to biochemical changes,
- relative to scholastic accomplishments,
- relative to familial relationships, and
- relative to drug abuse.

For each set of conditions, TM seemed to have a positive influence.

Many incorrectly associate TM with a religious sect or a given cultural origin. Even though Maharashi Makesh Yogi is the major proponent of TM--thereby causing some skeptics to doubt the authenticity of the methods, there are many other "straight" people who have learned the techniques and testify to their effectiveness. Research findings are impressive, and one only need to review the data--if an objective view is maintained--to gain an increased appreciation for the potential.

The Phi Delta Kappan (December, 1972) ran two major articles--one by Levine and the other by Driscoll-about the use of TM in schools.

TM has major implications for education as it helps to reduce stress. (There is little question that stress is a major impediment to the spontaneous flow of creative intelligence.) TM may help educators accomplish the elusive goal of achieving affective results without sacrificing cognitive performance standards. There are those, indeed, who point to higher achievement scores on standardized tests and increases in speed reading as being indicative of the improvements TM can produce in a learner. Results noted from experimental groups are positive. The Eastchester schools in New York have pioneered the TM innovation. According to the superintendent, Francis Driscoll, an extensive public relations effort was absolutely essential before a climate was eatablished that enabled educators to try TM in the district.

The experience of the Eastchester district is very significant; it illustrates some of the pains educators must take to inaugurate new programs, particularly ones as controversial as TM. Any program can be installed if responsible people are willing to accept some of the "pain" for doing what is required, this includes but isn't limited to the commitment of time, redeployment of resources, restructuring of priorities and so forth. Is the price or is the pain worth the rewards of the effort?

Too many of our schools over-emphasize productivity; for example, schools sometimes demand more papers, more math problems, more of nearly everything. These are apparently important at all costs, unfortunately, there is no place for children to go except to climb on the speeding assembly line. We should be doing the opposite.

We must find ways to help people unwind, slow down, and escape from noise as well as the trials and tribulations of increased productivity. Somehow we have managed to equate the concepts of quantity and quality in our schools. The concepts aren't equal! We need to do something to make more of a distinction between them. TM may be one sensible alternative. Those studying TM learn a "mantra" to help them achieve their meditative state. A mantra is a sound--much like a note being hummed under one's breath.

Even though meditation has long played an important part in many Eastern religions, the mantra is apart from rather than a part of the religious ceremonies. Many in the Western world decided to try drugs to obtain a meditative state of awareness. If there is a choice between LSD and TM, it doesn't appear sensible that too many people would opt for the drug trip. TM costs nothing, is easy to master (it takes about 2 1/2 minutes to learn the process), and can be practiced regularly as it requires only about 20 minutes of time each morning and 20 minutes each evening. Is 40 minutes spent in meditation too much to pay for an increase in efficiency and an improved ability to cope with the stress of twentieth century life?

The effects of TM are different from the effects produced by hypnosis; in TM, subjects remain alert but there are significant changes in bodily electrical activity usually associated with light sleep. In hypnosis, only slight changes occur in central nervous system functions. Perhaps the reason we have not given hypnosis much attention is that it is still considered a part of the nightclub scene, where people take off their clothes when told they are very warm. Perhaps we are neglecting TM because it is still related to the philosophical and mystical parts of the Eastern cultures we still do not understand. Whether these altered states of consciousness are accepted or not, we must begin to think about ways to use more of the mental processes available to us.

The increased general interest in states of consciousness is reflected in excerpts from the agenda of a large conference called Kohouth: Celebration of Consciousness. Topics covered at the conference included:

Psychic Liberation,
Garbage Astrology and Other Trash,
I Ching,
Cosmically Attuned Meditational Sounds,
Techniques of Meditation,
Matter-Reflection-Spirit,
Practical Divination,
The Spiritual and Moral Aspects of Alternative Energy,
Hindu Palmistry, and
Sufi Dancing.

These subjects may seem strange, but they are subjects whose time has come. Americans have long accepted apple pie, the flag, motherhood and baseball. When baseball begins to use altered states of consciousness, the subject has arrived. This is exactly what has happened.

The Kansas City Royals baseball team invested nearly $4 million into a futuristic baseball academy in Sarasota. Without going into all the details about their program, suffice it here to say they developed an elaborate positive mental attitude program which attempted to tie together the innate and learned talents of superathletes with an appropriate frame of mind. The first graduating class ran away with the Gulf Coast League Championship. Unfortunately, the program had to be dropped because it was too expensive to maintain. Not only was the program expensive, but it was ahead of its time; if Charles O. Finley remains in baseball, I would put a few chips on a bet that Oakland will eventually turn up with a similar, but a bigger and better program. According to one official closely associated with the Royals, the program would have been considered successful if the team had won the American League Championship five out of ten years. Even in this situation, there are serious questions about whether those responsible should be permitted to advance such a technique. Of course, the counter-argument is whether or not the individual liberties of the developers would be thwarted if they were told to cease and desist.

When the data are in (on the subject of these tools) we will have inevitable value judgments to make. My main concern is based on a presumption that the events of the future may force us to make decisions we are unprepared to make. We cannot make good decisions if we do not have the requisite knowledge on which to base our decisions. This leads to difficult questions: Should only a limited number of people--or an individual--be charged with the responsibility of deciding what shall happen to others? Would our country be ripe for a dictatorship?

John Gardner at one time projected the world as a place ruled by a dictator. Will we come to this point?

We must begin to tap the brain for more than we are getting. When I travel through high schools around the country I am amazed at the number of English literature classes in which children read Hamlet and respond in the same way to the same questions that were asked in high school many years ago. If we are going to perpetuate the practice of having the brain function solely at the recall level, we are likely in for serious difficulties. Is it possible that people will need to complete the obstacle course called school so it then becomes possible to obtain an education? Is this already happening?

This chapter has raised some questions about altered states of consciousness and their potential implications for education, and pointed out some social, moral, ethical and religious issues that must be addressed no matter what stance one takes. We must deal with the big issues; many of them will be outlined in the next chapter.

CHAPTER IV -- SOME PRIME ISSUES

Inevitably, the question of whether education should lead or follow comes up in discussions about the future. This is not a brand new question, of course, but we still have not done a good job of answering it. The ideas that educators can be problem solvers and leaders is sometimes ridiculed; even though our track record won't win many blue ribbons, our performance could be worse. As the picture of the future becomes clearer, I believe people will realize the school is the only institution capable of bringing about the needed social and people-to-people change.

To begin institutional changes, educators need to be aware of societal alternatives, such as those mentioned in the preceding chapters. Determining the issue is seldom a simple job. As John Gardner pointed out so cogently in one of his dynamic speeches while he was the Secretary of HEW, "It is hard to know where we face the greatest danger--from our unloving critics or our uncritical lovers."

Signs of our time point to those who would destroy our socioeconomic system; I am not referring only to the terrorist groups, but also to militant union groups which are pressing for change, some of which is dubious. I'm referring here to teacher unions as well as the more traditional trade unions. There are others who have become so enamored of the bureaucratic status quo they are unable to realize that monies and energies exerted often support the sponsoring organization rather than the project and/or people the agency was designed to serve. Bureaucratic leaders are often so caught up defending what is and what has been that they are unwilling or unable to contemplate how improvement might come about. The two groups (uncritical lovers and unloving critics) too often have blocked significant explorations.

From time to time individuals and/or groups attack various agencies and issues. Historically, those attacks have been directed at issues that rise from a cause--'cause the environment is being polluted by smoking and belching stacks from a particular industry; 'cause airplanes are noisy when they land and depart.'

These minor battles cause me to have mixed emotions: elation and uncertainty. First, I am elated because people can see it is possible to make changes in every area (including the Presidency of the United States and the FBI and CIA sacred cows). Change can occur when and if individuals pulling together are willing to accept the pain associated with the change. We can make a difference! The uncertainty emotion, though, comes from my belief that we are attacking symptoms and failing to recognize, and act on, underlying causes.

For example, it is pointed out almost daily by scientists, environmentalists and others that our planet, with its finite resources and limited capacity to absorb pollution, cannot support indefinitely the kind of explosive growth in population and resource consumption which has taken place in the past 200 years. Some efforts are, indeed, being made to help us stir from our immobilization. Unfortunately, our focused attention to a singular issue may be the very action which curbs our broader vision--that is, a gestalt perspective. Our interdependence, our complex interrelatedness not only in our country but in the world demands this broader look. If we are not careful, we can continue to invest our scarce resources--time, energy and talent--into rather narrow areas of concern and ultimately defeat ourselves.

Earlier examples have illustrated where we might go if we focus on independent vs. gestalt issues. For instance, we know our jails are overcrowded and dysfunctional. Court calendars are so badly in arrears that some district attorneys advocate simply abandoning the cases when they cannot be heard within a specified period of time. Justice delayed may be justice denied; but can anyone say anything good about justice that is not even administered? We can put a lot of energies into the post office charade, the renovation of the tax structure, the strengthening of the court system, the design of the federal election commission, the ethical and moral practices of medical personnel, the continuing education problems for middle-aged and senior citizens and so forth.

Few would deny that anyone of these issues needs careful attention and yesterday's action. We will need to make decisions regarding priorities. One person's trivia is another person's most crucial concern, but significant although low-level crises include:

- Resource and energy shortages
- Urban management problems
- Environmental deterioration
- Unemployment and poverty
- Economic and minority instability
- International competitive threat
- Food shortages and world famine
- Population problems
- Uncontrolled technology.

This list is the result of a rather simple research project. Over a two-month period, I reviewed each day the front page articles in the Wall Street Journal. This newspaper is on top of what is happening in the world. Almost without fail, at least four of the top daily articles emphasized the points above. Articles relating to each of the topics came up too frequently to happen by chance alone, and a clear profile of significant issues emerged. A check of the major television news programs and/or even consulting a local newspaper would probably produce similar results.

Willis Harman, Harman's Paradoxes, in a paper entitled "Critical Choices As the United States Enters Its Third Century," points out that direct attacks on the preceding issues typically have lead to frustrating and unanticipated consequences. For instance, welfare programs have tended to destroy the family. The need for foodstuffs has motivated poor rural people to move to the already troubled cities, made single-crop land ecologically vulnerable and polluted streams and oceans with pesticides and fertilizers. Measures to preserve environmental quality have contributed to an energy hassle, a phenomenon that will be with us for some time.

One important lesson we have managed to learn is that the resources of our planet cannot be all things to all people; where once we thought our resources were infinite, we now are aware they are finite. This recognition does not necessarily mean we will do anything to conserve or rebuild our resources; it simply means we are aware of the dilemma.

Harman, perhaps because he has been able to direct much of the energy of his life these past decades to the study of the future, thinks of change in terms of the whole-system concept. He believes that systematic change is possible; further, he has delineated very nicely, indeed, those fundamental paradoxes with which we must contend. Harman's concepts, paraphrased in the following paragraphs, suggests what may be ahead for society generally and education specifically.

CONCEPT: We need continued growth but we cannot live
with the consequences.

Our free enterprise democratic system is based upon the principle of supply and demand--and continued growth. When we can no longer produce more, we need to find ways to construct better, more reuseable products. Ultimately, the goal of continued growth puts us in a position of not having the resources available to continue with growth, but we are recognizing that if growth stops, we will find ourselves in drastic economic straits. When production quotas are reduced, the work force is also reduced; unemployment reduces buying power and the demand for products becomes less. Economic problems worsen. Unions dig deeper into the cookie jar to ensure as much fiscal stability as possible for those who are working. To cover increased production costs, the producing institution must charge more for the finished product. The cycle grows with momentum that seems irreversible.

CONCEPT: We need guidance of technological innovation
but shun centralized control.

Technology has had and can have nearly unbelievable influences on almost all aspects of our lives--physical, social, political and psychological. At the same time, some of our more powerful monopolistic producers enjoy a protective shield against any attempts to reduce the strength of their stranglehold. Is it possible, knowing what we know (or at least think we know) about the political influences of such groups as the oil companies, the military complex and the milk producers to have any hope that negative technological impact on society in general can be avoided. The dichotomy is between those who want to explore new vistas because of the implied freedom to do so--and the potential restriction that may need to be applied for the protection of others.

But how does this protection come about, by what agency, by what executive mandate, congressional law or judicial ruling? At this time in our history, the demands for "more" and "better" seem to be louder and more persuasive than the somewhat softer and more moderate voices calling for more prudent use of available resources. Some futurists believe it may become necessary to have even greater controls and regulations than we now have if the speed of the current trend is to be reduced. This talk comes at a time when more and more people are expressing concern about what they consider stifling "big brother" antics.

CONCEPT: Ever closer coupling between individuals and
organizations appears to lead in the direction
of reduced liberties and increased fragility
of the system.

Modern transportation and communication emphasize the interdependence of the parts of our national and international systems. We know more today about what happens in London than most of the people in New York City knew about what was happening in other parts of the city during the first of the century. This close coupling seems to call for more government regulation (similar to the points made in the preceding concept) to protect the wary (and usually weary) consumer from bad food, dangerous drugs and the dislocation of fuel and other commodities. Some of the arrangements which have been promoted and prohibited have caused instabilities in national economic matters. Because of the position of the United States in the world, these influences have affected more than our national sovereignty. The coupling also causes breakdowns in the system.

For example, if the truckers decide not to "keep on truckin'," the economy is very much affected. If there is a strike by the garbage people in a large urban area the results are dramatic. One can only postulate about the effects of the bankruptcy for New York City had the cataclysm not been avoided.

If our systems were purposely sabotaged by revolutionary or terroritst groups, conceivably our country could come to a screeching halt--and there is at least some evidence (based upon the rash of bombings and fires we read and hear about in the media) there are groups who believe in this approach. We are at a time in the history of the United States when radical and underground groups must be recognized for their influence.

CONCEPT: Possession of a societally approved work role is essential to the individual's sense of self-esteem, yet the economy seems increasingly unable to provide enough satisfactory work opportunities.

The word which needs emphasis in this concept is "satisfactory." Recently I have been startled by the frequency with which people tell me, "What I'm doing as a job really isn't important." They may be productive and they may receive more than adequate salaries for their efforts, but they look upon their job as an 8 a.m. - 4 p.m. necessary evil. There is ample research evidence to suggest that workers need to feel productive, challenged and enthusiastic about their work if they are to become self-actualized.

In a broader context, people need to have their act together with themselves, with their family (even though the family in this post-industrial society takes on a more generalized function than when the United States was an agarian society or an industrial society) and with their job. When the job is not especially exciting and/or purposeful, satisfaction is likely to be minimal. This lack of satisfaction influences the worker's life and personal disintegration is the result.

Competition for satisfactory and satisfying jobs continues to fan the fires underlying racial and intergroup conflicts. Even with affirmative action plans and quasi-legal support from the Equal Employment Opportunity Commission, minority groups find it difficult to land such jobs. When they are landed, there is a good possibility of backlash; members of the middle-majority not hired sometimes believe they were discriminated against. At one time in the recent history of our country, there was concern over communism, but the real concern now is less with political principles and more with the differences between the have's and have-not's. Even if it were possible to establish a better balance between the two groups, the bigger question of job satisfaction might still be present. How can we as educators help people find and accept jobs that will be productive and satisfying and at the same time, provide enough economic support for the good life?

CONCEPT: Industrialized nations will find it costly to move toward a more equitable distribution of the earth's resources; but to not do so may be even more costly.

All over the world less developed nations are beginning to flex their muscles; they are realizing there is unrest in the nations of the world considered the leaders. The newly developing nations are demanding--and receiving--trades on their own terms for scarce resources they have and others need. They seek the standard of living that is enjoyed by United States citizens at home and abroad. Perhaps the "ugly American" on his world travels, encourages, by his negative behavior, the little nations to take now rather than ask first. Is is possible the aggressively developing nations will accelerate their demands at such a rate that the only way they will be able to reach their higher standard of living is by lowering the standards in other parts of the world?

Harman's concepts pose truly difficult problems. There are no immediately apparent solutions; the basic tradeoffs among environment, life styles, personal freedoms, amenities, international stability, high energy and food costs, public health, unemployment and economic recession, and other social costs are growing more and more intolerable; it is not clear what can be done to make them less so. What is happening, in short, is challenging the legitimacy of our basic system goals and institutions.

The president of Stanford University, James Lyman, made some cogent comments regarding insitutions in a speech made to the Association of American Medical Colleges in 1976:

> "It requires no special insight to see the apparent failure of our various institutions to function in anyone's interest, even those of the privileged. No society known to history has functioned in everyone's interest: in every society, from the Athens of Pericles to the China of Mao Tse Tung, there have been some people who fared notably better than others. But when scarcely anyone feels adequately served, the danger is acute.
>
> "Yet there are moments when we seem to be approaching that situation today. One no longer performs so simple an act as mailing a letter with much confidence in the outcome. I received one not long ago from a friend in Massachusetts. It was addressed with scrupulous attention to detail, including the right zip code: it took nine days to reach Palo Alto and it had unaccountably picked up a Tampa, Florida, postmark en route."

New Goals

As one thinks about the critical high-level issues, the need for total system change is obvious. Changes in previously accepted goals of our country may be necessary. I am referring, of course, to those goals which have included:

- material progress
- private ownership of capital
- maximum return on capital investment
- freedom of enterprise.

Changes in goals may take on these forms:

- maximum human growth and development (involving some material progress)
- widespread ownership of capital
- fair return (consumer satisfaction) on capital investment
- freedom and responsibility of private enterprise
- care of the planet and the associated environmental quality.

Human Growth and Development

Our schools are not helping in the area of growth and development. Nearly every climate study shows considerable dissatisfaction with schools, dissatisfaction shared by teachers, students and the students' parents. For example, in a school in the San Jose, California, area the School Climate Profile instrument was administered to teachers and students; both groups agreed that morale in the school was low. When analyzed closely, each group had a different opinion about the causes. The teachers thought morale was low because the students were apathetic; students thought morale was low because the teachers lectured nearly all the time, and the lectures were boring. Both students and teachers agreed the community did not support the curricular and/or extra-curricular activities. Invariably, one group typically believes another group is at the root of the problem.

High morale (satisfaction) is an important element in growth and development. Satisfaction at a school is probably as important as learning "survival skills"--the three R's. Even in these important areas, there is some doubt that schools are accomplishing their purpose. On the basis of the College Entrance Examination Board scores and based upon data we receive from standardized tests, overall achievement scores seem to be going lower and lower. Educators are aware that numerous students graduating from high school each year are poor spellers, have difficulty assembling a reasonable paragraph and have trouble knowing when they have been given correct change in money transactions. McDonald's hamburger chain has lost so much money in change making that they have installed mini-computers on the serving counters to protect themselves against the common errors made by those operating the cash drawers.

If schools are going to be at least partially responsive to the task of helping people obtain survival skills and the satisfaction necessary for growth and development, immediate changes are necessary. Many teachers claim they offer what students need, but the students fail to invest enough of themselves to learn what needs to be known. The claim is probably partially true, but the take-it-or-leave-it attitude is not appropriate. All to often it puts students in a position of "cumulative ignorance." Students who have completed the fifth grade, but who still score at the 2.5 level on standardized reading tests, are often moved on to the sixth grade. Teachers begin working with these same students as if they were at their new grade level, rather than going back to the entry level (2.5) of the students. The more the student progresses, the more the student actually falls behind; this is cumulative ignorance.

Even knowing what the problem is does not always suggest specific help. Few high school teachers, for example, are aware of techniques available for diagnosing the entry level of students; few high schools have reading programs for students who need remedial attention; most high school teachers believe reading ought to be taught at the elementary level; learning to read is not, according to some secondary teachers, a part of history, math, science or other academic areas. No special help should be made available to these students who have difficulty; they had their chance.

Ownership of Capital

Widespread ownership of capital is another projection which is not gathering much momentum. Greater government ownership of services, at least in some areas, seems to be the trend. One of the basic principles of the free enterprise system is the right to own and operate a business--offering a commodity that is so important that other people will be willing to pay for that product or service.

The large monopolies seem to be expanding their conglomerates into more and more fields; this seems in opposition to the direction futurists tell us we need to take. Monopolistic control puts more and more resources into the hands of a few.

Fear of the Communistic principle--all for one and one for all--is probably too great to overcome even if it should be. A majority of the people in the United States would consider movement toward the guidelines promoted by Communistic countries as a step in the wrong direction. At the same time, others believe that those who are not working are taking advantage of the welfare system; they should be banished to a place like Siberia; they should be made to work or be cut off. Nevertheless, our system seemingly is becoming more and more socialistic. The system includes state control over medicare, social security, transportation systems and other government owned or regulated programs. It will be interesting to see what happens eventually to these types of arrangements in the future. The post office was able to break out of the mold; the results have been so discouraging some are convinced we should return to the earlier controls.

On a rather small scale, some groups are beginning to band together in communal arrangements and cooperatives. The communal or kibbutz-type living plans usually do not have a long life expectancy; the research I have read shows the groups seldom last longer than eighteen months. The reasons for their demise seem to be:

(1) a lack of agreement as to philosophical principles underlying the purposes for which the group was founded; (2) the breakdown of decision-making patterns for arriving at solutions to problems; and (3) the need for private life-space. Adequate life-space does not seem to be readily available when people live too closely and to intimately with each other. Theoretically, communal arrangements are supposed to provide security; often, however, the arrangements turn out to be bothersome. Sometimes the new forms cause more trouble than the existence the people tried to escape.

Cooperatives are financial arrangements to combat such a problem as inflation. Consumer goods can be purchased in quantity at much lower costs. By dispensing goods among themselves, members of the cooperatives are able to spread their scarce fiscal resources further. Research literature to date suggests those who particiapte in cooperatives take a strong position of ownership; therefore, they invest much of their personal energy in making the system work. This feeling of ownership makes the significant difference.

The concept of ownership is not strong in most schools. Many teachers who teach in urban areas live outside the neighborhoods where they teach; students are often bused out of their neighborhoods and, as one result, do not and can not consider the school as a community center. Too, different departments in schools often consider their functions as most important and fail, therefore, to support what happens in other departments; for example, drama vs. athletics, athletics vs. work-study and so forth. Pride of ownership is an important force often not exploited to its fullest advantage. Ownership and pride are not even considered part of the vocabulary in the philosophic goals for many schools.

One example of ownership was noted in a junior high school that was having vandalism problems in a girls' restroom. As quickly as the destruction was repaired, the john was again nearly destroyed. This vicious circle went on and on until the problem was called to the attention of an ad hoc group of students. The student group decided to paint the room with a design somewhat more contemporary than the pea-green shade found in most of the restrooms. For a period of two years now, there has been no damage in the restroom. Cleveland High School in Seattle enjoyed the same results when the cafeteria environment was improved. While we see some signs of ownership in certain areas of the school, for example, football teams, pep squads, debate groups, school newspapers and school radio stations, we seldom see a more generalized ownership which dramatizes how pieces of the place can be brought together to make a valuable whole. This could occur in decisions about grading, discipline, evaluation of staff, selection of courses, and use of fiscal resources.

Return on Investment

A call for a fair return on capital investments is being made with greater frequency. The rise in the number of consumer protection groups, like Ralph Nader's raiders, shows the general dissatisfaction of people concerned with what is paid and what is obtained. Consumers have become increasingly alarmed at the frequency with which they are returning to the repair shops with malfunctioning television sets, automobiles and other items. Some give up in desperation when the problem keeps recurring even after the "repairs" have been done. In interviews with twenty-three persons regarding repairs made to their automobile, only two told me they were completely satisfied--and even these two thought they paid more for services than they were worth. The life expentancy of products seems to be getting shorter and shorter, as if manufacturers are purposely assembling products in ways that will soon require either repair or replacement. This may not, in fact, be the case, but the concept of "let the buyer beware" seems to be as appropriate today as ever before.

How much responsibility does the school have to focus on this problem? Not much, apparently! Many papers go unmarked, the challenges for those who can do well are not great, the drive for excellence is not very strong. Educators have a responsibility to model and expect superior efforts. A recent study conducted by a university professor working in San Francisco found that teachers gave low achieving minority children considerable praise, but at the same time the teachers decided children were incapable of meeting greater challenges. This process resulted in what the professor described as racism without racists. Have current standards been reduced to such a low level that our expectations have been limited? In the long run have we inadvertently limited aspirations rather than elevated them? Have we short-changed students?

Perhaps the most recognized demand for fair return on the investment of funds is coming in the form of more accountability being required by taxpayers and legislators for what is happening in schools. Only a few decades ago, educators were able to convince those in charge of the purse strings that nearly any educational or societal problem could be attended to when funds were available. History has shown us this claim is not necessarily true! To invest more money in ineffective efforts--causing incredible drain on our finite fiscal resources--has alienated not only those who were theoretically being served but those who were supposedly providing the services.

Only recently have we begun to admit that complex problems require complex solutions, and that instantaneous solutions to complex problems do not exist. Unfortunately, the demand for accountability has produced a trend toward management by objectives and other military and business systems which may not have direct application to the educational community. When mandated by legislatures, resulting performance objectives have frequently been mundane and irrelevant; efforts to prepare objectives have often been academic exercises--once completed, the objectives were filed and forgotten. This need not be the case, but such an outcome is more typical than atypical. With this kind of modeling behavior coming from educators, there is little likelihood greater responsibility can be expected from students.

The number of voters opposing tax overrides and special building programs at the local level supports the contention that the general public does not believe it is getting its money's worth. Even in cases where positive votes are cast, the public sometimes changes its opinion. I am aware of two cases where superintendents lost their jobs because the schools they built were considered replicas of the Taj Mahal; even though taxpayers voted for the buildings, they were not ready for the $11 million-plus extravagances, especially when the program did not seem to match the glamour of the architecture. Educators might try to put aside money--5% of the building cost--for staff development, so that whatever goes on inside can be an improvement over what is being replaced.

The poor as well as senior citizens are not as adamant about what they think are extraordinary expenses as are parents and middle-class taxpayers; the less fortunate should become more adamant. One who lives with a low, fixed income, is not likely to offer support for air conditioning, carpeting and other expensive features. The demand for more payoff is likely to continue with increased emphasis and impact.

Private Enterprise

Freedom and responsibility of private enterprise is an issue which may not be immediately recognized as a focus for education, perhaps because the concept has a long-range outcome. But this need not be the case; values taught in school have a direct bearing on the lives of those who ultimately take over business and service agencies. Even though many people believe educators should not teach values, there is no question that values are taught both directly and indirectly. Most schools teach implicitly that competition is an important value. If not taught overtly, values are definitely taught covertly through the various life-models teachers individually and collectively live.

Some years ago, while working on a Navajo reservation, an anthropologist and I observed a headstart class in the community area of Canoncito, New Mexico. As a part of the class activity, the teacher gave a short examination to the children. The Navajo youngsters, after initial work on their tests, began to pass their papers back and forth to each other. The anthropologist was alarmed at the overt cheating. From the students' perspective, however, their behavior was consistent with their everyday experiences, when one Navajo child helped to tend the other's sheep. Rather than being concerned about getting a better grade on the test than the other person, the children were trying to assist each other.

Is this type of value supported in most of our schools? Haven't we seen evidence at almost any institutional level where people struggle to "win at nearly all costs?" The pressure to do well on tests is ever increasing, increasing to the point where imaginative ways to hide "crib" notes, to steal master tests and to get answers one way or another are commonplace. A recent incident at West Point validates this problem. One univeristy is currently considering eliminating their honor code, a code that has prevailed since the opening of the institution. The action may be necessary because of the overt instances of cheating; the honor code has become a farce.

Values are, one way or another, taught in school; there is need now to see if the values rewarded are those we support. Does the action in schools support the philosophy we say we uphold? Can we find ways to help people learn because they want to learn (and consider learning intrinsically valuable) rather than learn because of extrinsic rewards (or punishments) they receive?

Care of the Planet

Care of the planet and environmental quality can become a dominant force in our schools and society. Alvin Toffler, author of Future Shock, declares we are now into a new historical phase called the "Eco-Spasm," the phase between the industrial and superindustrial societies. Because industry and the environment are so closely entwined, we are beginning to see examples of legislatively mandated impact statements; we are required to illustrate how specific acts may or may not be related to environmental issues. These statements are designed to help anticipate the potential impact of actions, rather than permit the action and then being helplessly amazed at the peripheral problems caused.

The younger generation, according to some of the media, is more concerned about the environment than the rest of us. (The bedrooms occupied by this generation often fail to support this observation; I have seen some that look as if a mini-atomic bomb had exploded in the room). The schools, generally, do not seem to give much emphasis to the idea of conserving the environment, either through programs offered or through staff example. Look in almost any school cafeteria following the lunch period; chances are debris will be found in large quantity. Check the football stadium after a game; check the paper wasted in the faculty workroom. The messiness in some of these places is similar to the messiness along many of our freeways. Students do not learn about the planet and/or the environment by reading about the needs in a book, or by hearing someone lecture on the topic. They learn by experiencing. What would happen if school administrators told custodians and groundskeepers to stop cleaning. How long would people wait before they did something about cleaning after themselves? Not long ago in an airport waiting room in Denver where the custodians were on strike, papercups, newspapers and other wastes had accumulated. Then a group of people waiting to board a plane followed the leadership of a Continental ticket employee and helped to clean the area. Is this type of sporadic concern a regular part of our operating plan?

Can schools in some way promote and support the values suggested in this chapter? Some school personnel believe educators not only can, but must. In the next chapters I will show how some schools are dealing with the high level issues and offer some specific advice on how schools can initiate planned programs for progress. For real change, there must be closer alignment between our public social policy and the functions of our schools. Undoubtedly, people will begin to organize around issues and from these issues will come controversy. Controversy often leads to confrontation; it is at this point where many people decide to side-step. From confrontation, though, can come creative solutions to spectacular difficulties.

CHAPTER V -- THE SCHOOL AS LEADER

> The time for binding up our professional wounds, for reflection, for determining a place to begin the necessary reconstruction is fast upon us. That place is the single school with its principal, teachers, and pupils as primary participants, and parents, community residents, and citizens generally as secondary participants...the school should become, indeed, the source of our enlightened self-interest, joining us all in constructive endeavor.
>
> John I. Goodlad

John I. Goodlad's speech to the ASCD Annual Conference held in New Orleans in March, 1975, emphasized that under certain conditions, schools can make a difference. True, setting up the necessary conditions is not always one of the easiest tasks; we are naive if we do not understand that people in schools operate under constant constraints. For at least a generation, schools have been expected to deal with the problems of war, peace, poverty, crime, joblessness, segregated housing patterns, racism and other social illnesses. Schools have been expected to solve problems that society has been powerless to overcome. "Others" have found schools easy to blame for many present-day ills.

We should do better, but better performance and results will not come about through slogans, myths or through the one-line cliches espoused by our illustrious and vocal politicians. The inadequate, uncoordinated and at times arrogant efforts from outsiders will not help. The responsibility lies with the local school groups, staff, parents and children.

Our schools could hold a position where they could perpetuate the foundation of our freedoms, the hope and security for the future, the stepping stone for upward mobility and the force behind our improved standard of living. Today the institution is being torn apart from without and within. Nearly everyone is probing and poking into the works. Even those schools that might make a difference find themselves overcome with constant disruptions through problems associated with multiple funding proposals, the paper blizzard for accountability and frequent visits from monitoring groups (many doing the same job).

Kinds of Problems

Many of us have been associated with the schools during a time when busing and other efforts were being made to bring about intergration, to eradicate racism. For the most part, the changes have been brought about by the law of the land, primarily through the judicial branch. Apparently even the wise men of the courts have not been wise enough to figure out that busing and school integration do not automatically eliminate racism. Other matters must be addressed, matters requiring more attention than can be given by the few people in the highest courts of the land. It has been charged that discrimination toward ethnic groups and women is running rampant in our schools. Examples of these problems are found in textbooks, hiring practices, job opportunities and so on. We know about these numerous inequities but, except for affirmative action plans, little responsibility for rectifying the problems is owned by our leaders.

At a time when the public's attitude gives top priority to improving discipline in the schools, educators have a two-headed monster to deal with--educating themselves to become aware of the future and educating parents and students to become more open to the available options. In a Gallup survey conducted in 1976 (as well as for the preceding six years) lack of discipline in the public schools headed the list of concerns. Indeed, three out of the top four problems in the Gallup list below relate to the problem of student behavior:

- Lack of discipline
- Integration/segregation problems
- Lack of proper financial support
- Use of drugs
- Difficulty of getting "good" teachers
- Size of school/classes
- Parents' lack of interest
- School board policies
- Poor curriculum
- Lack of proper facilities.

Members of the education community are well aware of behavior problems. James Harris, when elected president of the National Education Association, painted a grim picture of certain features which he felt were threatening education. He pointed out that nearly 2 million school-aged children are not in classes, mostly in the big cities; that on any school day 13,000 kids of school age can be found in correctional institutions and another 100,000 in jail or police lockups; that crime and violence in schools are growing at unprecedented rates. Another NEA survey (1975) revealed the following figures:

- In-school assault and battery has increased 58 percent since 1970
- School robberies have increased 117 percent
- Sex offenses in school have risen 62 percent
- Drug problems (including alcohol) have gone up 81 percent
- The number of teachers attacked physically during the 1973-74 school year was 63,000
- Personal property maliciously damaged was reported by 239,000 teachers.

Many states now spend more money to incarcerate a child than to provide an education. In Iowa, for example, the state pays $9,000 a year to maintain a student in a juvenile home but only $1,050 a year for an ordinary student. Maryland spends $18,000 and Michigan $10,000 for incarceration. The remedial assistance compared to preventative programs is startling. This issue calls for a turnaround in our priorities; we cannot allow all of our energies to be put into rectifying what has been without focusing on what will be.

Some years ago I was convinced that making changes in schools was rather simple; all one really needs to do is to develop a substantial model, package the model so that it is transferable and transportable and insert it into the new school site down the highway. This is the procedure followed when a new piece of electronic gear is made ready for the market--design a prototype, test it, disseminate it. If the system were applicable to schools, changes should have been made by now; there are many educational gurus jetting back and forth across the country carring the "true word." If people in schools had listened, our problems would have been eradicated.

But schools are not analogous to electronic gear. A little something is different between solid-state circuitry and the personal dynamics of people in a school setting. How much more manageable the task would be if it were possible, as with an old television set, to take out the old and stick in the new. How much more inviting the challenge would be if we could get the structured district unit to change rather than the individual school.

For better or worse, the individual school seems to be the unit that makes sense when change is championed. Individual teachers have tried to do it alone; sooner or later they found they did not have the energy to swim upstream. Examples are abundant in the National Science Foundation's efforts to get new curricula into the schools. Individual teachers have gone away to summer institutes to learn about new materials and methodologies, only to be stifled when they returned home because few others shared their excitement. Over time, many of the teachers gave up, reverting to the usual mode of operation and telling students how experiments ought to be conducted rather than having students perform the investigations themselves.

In spite of difficulties, at least three school districts in the country have given more than casual attention to the study of the future: Amphitheater School District in Tucson; Dallas Public Schools, and the Palo Alto Schools. Each district has a planning staff, which has put together various documents reflecting their points of view. These documents represent quite different perspectives.

The Tucson Findings

The Amphitheater schools not only have completed a futures study but they also have put together a planning process which is well worth reviewing. The process document was assembled by members of the high school science-fiction writing class; students can and will take active roles when motivated. The students and their advisor have conducted a number of future planning seminars for different groups of people; hence, they have been able to teach others the processes. They have also presented their findings to the mayor of Tucson.

A review of the Tucson document, Art of Future Planning--a relevant and useful tool--shows a variety of content areas:

- education
- government
- environment
- employment
- transportation
- population

- energy
- social welfare
- social problems
- arts
- future history
- industry
- agriculture
- recreation and leisure time
- life styles.

The students at Amphitheater High School took on the study as a special project aimed at the following goals:

- The advancement of the art of futures planning. It assumed that a spectrum of futures were identifiable through empirical means and that alternative futures could be used as a practical planning tool for policy decision makers.

- The production of a series of plausible futures as generated from perceptions of opinion leaders.

- Assistance to help people in schools and other public agencies in installing the planning process.

- Assistance for students who were learning forecasting techniques and how to experience writing scenarios and future histories.

They saw their project as something which could benefit business people and students; moreover, the project could assist with the development of new curricula for the schools in the district. There is already evidence showing that county and city planners are recognizing the potential benefits of the student report; some of the student data are being reported in the planning documents used by the city and county.

The Dallas Document

In August, 1974, the Dallas School System prepared Volume I of their educational forecasting document--for the year 1990--titled Skyline Wide Educational Plan (SWEP). This booklet was the culmination of an important phase in their total futures study; the study was sponsored by a grant from the Department of Health, Education, and Welfare, and prepared for internal use.

The report was prepared by the SWEP staff, representing what they call a Three Dimensional Model Secondary School of the Future. Elements in the study included:

- manpower needs
- student demography
- the role of technology
- career impetus
- life styles
- student needs

The report not only defines what needs to be done but describes the mechanisms which the staff believed will be necessary to make the new ideas operable. For example, the report outlines the kinds of facilities which will be needed, the staffing patterns which will be feasible, the kinds of learning activities that can go on inside the school and the kinds of learning activities that can go on outside. The Tucson and Dallas studies took considerably different tacks as they considered the future. Even though they came up with some similar findings, the dissimilarity of results is worth reviewing. There is more than one volume in the Dallas report; these can be requested from the project office. Simply becoming aware of the content and process goals which they have projected is worth the cost of the volumes.

The Palo Alto Study

In the Palo Alto schools, another futures study is underway; this effort is called Project Redesign. The most recent report (at this writing) is the November, 1975, document called the Long Range Plan. The design management team, headed by Tom McCollough, has worked on five specific district goals:

- To assure academic excellence, particularly by focusing on basic skills
- To improve the district-wide management process
- To provide better procedures for human resource development of staff, students and others in the community
- To become more responsive to the diverse needs of students, staff and parents
- To assess progress and evaluate programs more effectively.

The Palo Alto projections to date go only through 1981, but the management team is beginning to consider directions beyond 1981. The report mentions three alternative futures: (1) the status quo extended; (2) cultural transformation; and (3) economic disappointment. The first alternative is an extension of the past, more of the same. The cultural transformation model suggests a major shift to a situation dominated by the following values:

- education is valued for its own sake
- students are prepared to cooperate in the real world
- complexity, options and flexibility are considered assets
- students are expected to become interdependent with others
- the process of education is at least equal with outcome.

The dominant values of the third option are these:

- what is learned should be practical
- students should be prepared to compete for jobs in the real world; if resources are scarce, only students who excel should be educated
- uniformity and inflexibility should become educational norms
- students should be able to adapt to an unpredictable economy or political structure.

The third alternative isn't much unlike the extended status quo.

Project Redesign has produced a number of publications; they, in a limited quantity, are available from the school district. The processes used by the management team to arrive at their conclusions are presented in a later part of this publication.

The Nueva Forecast

At the Nueva Learning Center, a number of parents, children and staff have been giving thought to the future. The following excerpt, reported below, is from a discussion paper used at the school entitled Nueva: A Forecast For the Future.

Much of the turmoil and uncertainty in the nation today is a result of rapid value change. Old, once-revered values have taken on new meanings and are often felt with new intensities depending on one's views of one's place in the political spectrum. Privacy, freedom, patriotism, hard work, independence, self-reliance, respect for authority, honesty, loyalty, family and community are examples of terms which once drew people together in common causes; now these same terms sometimes irritate and even divide.

Clearly, we are in a period of transition in which new concepts are being tested, new styles evolved and new goals sought. Whether the experiments in new values, attitudes and styles will be lasting and ultimately beneficial remains to be seen. What does this have to do with Nueva?

Nueva has been and must continue to be in the forefront of positive change. Change, unfortunately, is not always positive; if Nueva is to offer assistance as a model for others, our community of people must, in the near future, take dramatic steps to act upon projections being made about the days ahead. Decisions and actions will not be easy! Perhaps some background information on the factors affecting Nueva's "next steps" will help to facilitate discussion.

For the past two years many members of the Nueva community have attempted to become aware of and to gather information about some of the current activities and experiments being conducted in such diverse areas as population control, medicine, technology, parapsychology, urban development and transportation. Involvement in the futures study has led us to the conclusion that the Nueva community must make some fundamental decisions. One major question for which a decision is needed is this:

> "Shall we focus our attention on the resolution of past problems, or shall we accept the challenge of tackling the problems ahead of us as a society?"

Stated differently, shall we continue to work on such problems as classroom management, approaches for teachers attempting to individualize instruction, or should we attempt to completely revamp our educational alternative so that it more closely resembles the forecasts predicted by futurists?

Some in the Nueva community believe we are doing a reasonably good job of preparing children for the 1950's (and this may be thirty years ahead of some other schools), but there is strong opinion that we are doing too little to meet the anticipated challenges of the 1990's.

For example, what if we were to accept three projections from the futurists: (1) The psychological needs once met by the extended family are no longer being met because over 50 percent of the adults in our society are divorced; (2) fifty percent of the population by 1994 will be paid not to work (at least as we define work today) in much the same way farmers have been paid not to produce food over past years; and (3) education will start earlier and continue longer than at present, with less sharply defined natural terminal points.

If these forecasts are accepted, one can project a different kind of learning environment. Perhaps Nueva should more closely resemble a cooperative, commune or kibbutz rather than a typical elementary school in the United States. Roles of parents, children and staff would be changed dramatically. Are we ready?

If the answer is "No," Nueva should within the next ten to twenty years be an outstanding elementary school, perhaps modifying its current program to include children as young as ten months of age and parents. Research at Harvard conducted by Burton White and others not in the field of education, support the theory that real learning begins about the time children begin to walk from one place to another--somewhere around eight to ten months.

Our programs should be well defined within ten years; that is, identification criteria for gifted and talented children should be reasonably well prescribed and the diagnostic-prescriptive survival skills--as we know them today--of reading, writing and arithmetic will be advanced to the point where we can come close to guaranteeing at least two years of growth per academic year according to standardized achievement test criteria. Our clientele will be more stable, with quite a few children waiting for scarce vacancies, even though we will see a shift in the population, moving from the South Peninsula to the North Peninsula as well as into the San Francisco area. Our finances, we project, will be in good shape, largely because of legislative changes permitting private schools to obtain public monies and because the voucher system will become more readily available to parents seeking an alternative education.

We will have been able to work out our internal inconsistencies by bringing our action much closer to our rhetoric. Our learning center will be recognized by people in the schools as a legitimate developer of prototype products, created and tested at Nueva. Further, these products will be disseminated and distributed by other agencies, and appropriate quality control measures will attend the products disseminated because Nueva staff or Nueva-prepared personnel will help others learn to use the products effectively.

In short, if we continue on the tack we have chosen, our goal of offering a scholarly education in a humane environment ought to have been attained by almost any acceptable criteria. Considering the growth and progress of the school and learning center over the past eight years, our expectations are not out of reach.

If we decide to dream, however, and if we answer our question about readiness for major changes in the affirmative, the possibility of achieving our new goals, many of which at this time are not even well defined--will be terribly difficult. An incredible number of constraints will stand in our way. For instance, if we are to become self-sufficient through our own productivity, should we sell our current building and purchase more suitable land? Can we find enough families and other people willing to give up what they have to take on something new? Can we obtain the kinds of personalities that can interact together well enough to articulate desirable philosophic goals?

These are the kinds of questions which cannot at this time be answered; perhaps the questions can be answered only as action is taken. Are we convinced that the rewards of the gamble are worth the risks? Clearly, there is not much precedent on which to base any action; little information is available about the psychological and/or sociological factors which influence successful communes or other such uncommon organizations.

Perhaps our new school could establish a kind of living, growing, learning environment which would enable and encourage people of all ages to start and continue their education; each person at one time or another would likely be a teacher as well as a learner. People likely would have responsibilities both inside and outside the group; professionals, both men and women, would carry on their professional responsibilities in the community at large, and they would also serve within the school. Some thought would need to be given to the kinds of professionals--doctors, dentists, lawyers and so forth--who would make up part of the Nueva community. Men and women might also stay at home if their responsibilities called for this. Home would probably be a condominium-like structure with some common areas such as a swimming pool, television viewing area and meeting space. Private space would also be included in the structure.

All people would assist with the education of the young; this might be one way to put a stop to some of the sex stereotyping that is prevalent. Those who function outside the home/school would be expected to take students (children) with them on business trips and field trips so that the youngsters could have as many first-hand experiences as are deemed appropriate, under the guidance of a caring adult. The ideas in this paper do not appear to be revolutionary or radical, but the implementation of such events will undoubtedly be a severe challenge. The apparent potential rate of failure is high, for a variety of reasons.

Without belaboring the point, we find ourselves in the dichotomous position of seeking new solutions to past problems or potential solutions to new problems. With attention to the former, we can likely achieve closure. That is, we can obtain support and endorsement from many educators and parents (as well as children), bask in the limelight of positive public relations, obtain more than adequate financial remuneration and probably not be confronted with too many sudden surprises.

If we accept the counter-position, though, there is a good possibility that much of what we have worked so hard to get will not be considered important. Rather than finding new solutions to old problems, we will need to take considerable time to plan our strategy for where we want to go. This strategy is not something that can happen on the spur of the moment or at the end of the busy school day. We need to understand that we do not know how to do what we want to do. Further, we need to realize that there are few, if any, maps to show us the way. Can we accept the incredible level of ambiguity that the tasks require?

Of particular relevance to the issue is the unbelievable complexity of the problem. As the futurists have pointed out repeatedly in their studies, the great gestalt (comprised of the many interactions affecting our society) is nearly impossible to comprehend. Our society has become one in which there is great interdependence; that is, a serious change in one factor often affects other factors. Can a mini-community such as Nueva cope with these factors? There will, undoubtedly, be both internal and external influences with which to contend; these should not be underestimated. The interaction of mainstream forces, changing values, social institutions and technologies portend a frantic time. The time may become more frantic if critical issues are not faced.

What is called for?

First, we must define a process that we will follow to arrive at the answer to the fundamental question: what direction should the Nueva community take? We probably can arrive at the future by the usual evolutionary processes, but if the fabric of the new is going to be significantly different than the fabric of the past a quantum change is required--not modification or variations on the current theme.

The decision-making process should undoubtedly involve the board of trustees, the founders of the school, parents, children, staff members and perhaps outside consultants. An ad hoc task force might be best for this purpose; those most interested could volunteer to participate on the study committee. The task force could prepare their recommendations for the board of trustees; presumably this agency would be the forum for the final decision.

To arrive at their recommendations, the ad hoc task force should review the special report prepared on the unique characteristics of Nueva; in addition, the committee should review the futures study materials which have been accumulated over the last years. The ad hoc committee should be allocated a reasonable budget to expend on their study. These monies should be used for public hearings, research and other such activities the committee deems necessary. A task force deadline should be established to keep the process moving.

A sensible time line should allow for a wide source of input, and, more important, it should provide ample time for individuals to make up their minds about supporting the final decision or looking for other options. In essence, one decision might support an increased investment in current energies directed toward existing goals and priorities, that is, refining those agreed-upon unique programs at Nueva. A contrasting decision could require a total change from current priorities; a necessary redeployment of energies would be required.

This paper is a working paper. No conclusions are built into the document. All readers are encouraged to offer responses and to make suggestions for improving it. The choice at this time seems to be ours, whether we will decide to play it safe or to gamble remains to be seen.

Other Programs

In addition to the kind of planning underway at Tucson, Dallas and Palo Alto, individual teachers are also trying to make a difference with their students. Mentioning all programs on the future would be impossible, but the examples are representative. One rather simple program, usually used with students at the elementary level, is a curriculum offering found in Wallings, Pennsylvania. The teachers there have prepared a syllabus on the future which is used in much the same fashion as a regular course of study outline. The materials come primarily from the Twentieth Century television documentaries, narrated by Walter Cronkite. The curriculum has an abundant number of supplementary activities encouraging students and teachers to work together. The school has been able to take advantage of the television network's audiovisual and research capabilities, but has tailored what is available for its own purposes. The films seem to be somewhat inadequate by themselves because the subject is covered only briefly. The Wallings' school people have apparently found a solution to this problem.

Another curriculum unit on the future has been put together by Frederick M. Fisher and Aase Ericksen at the University of Pennsylvania. This curriculum is called The American Dream. The unit combines a study of popular culture with the study of personal culture, putting the student at the center of the program; that is, the student is encouraged to explore his or her own values and attitudes toward particular cultures on a personal level.

To get at the objectives, the course uses the student's family, neighborhood and cultural environment as umbrella topics. Specifically, the course gives attention to the following:

- The importance of the surrounding environment--the family, the neighborhood and the cultural setting
- The desire for and importance of education
- Faith and confidence in our abilities
- Ambition to succeed in achieving objectives
- The value of information sources and channels
- The importance of working with others to achieve goals

The curriculum is supported by films and other media and simulation games.

A third major curriculum activity is being tried successfully at Twin Pines School in Oakland, California. This course, used with sixth grade students, is titled, "Futurology: A View Toward 2000 A.D." The students and teachers emphasize forecasting and fantasizing about the future. At times, the content of the course is speculative and amusing. The teachers believe the forecasting skills in the course are significant because they help to prepare a child for a world where reality sometimes surpasses fiction.

The teachers have been able to use the theme of the future in such a way that traditional subject areas become integrated into the learning activities. For instance, the art room and the science rooms have housed many examples of student art fantasies and futuristic scientific projects; reading was used to locate more information about a given topic; future-oriented music was written; math became a way to calculate travel time between places on the earth and between outerspace sites.

Another fascinating part of the study had children learn computer languages and eventually gave students opportunities to interface with a terminal located in the classroom. The teachers in the school, however, did not become so enamored with the future that they ignored the past. Many children who have been brought up with heavy doses of television viewing do not have an appreciation for the many resources of the past, present and future. The teachers tried to breakdown the notion that the world is entirely new by tracing the historical continuity in art, science and music among other areas. Too, the teachers realized that not everything of importance can be brought to the school. They availed themselves of many community opportunities, including such places as the Berkeley Radiation Laboratory and the local Kaiser Hospital. Access to these community resource areas was arranged by parents and friends of the school.

Schools need not be locked into a system which prohibits growth. The growth process begins with individuals. Many of us are quite capable of knowing how others ought to change, what others ought to do to improve and how others ought to see themselves; but when the focus is directed at self, the task becomes enormously more threatening and difficult. The challenge is obvious.

CHAPTER VI -- GENERATING A PHILOSOPHY

Some years ago, everyone engaged in completing our teacher education requirements, faced the requirement called "developing an educational philosophy." More often than not, this was seen as an academic exercise, one which had little to do with the real world of textbooks and students. Few students of education got beyond the game of recognition, that is, being able to recognize whether a philosophic concept belonged to the idealism camp, the realism camp or the camp of any well-known educator-historian; for example, Rousseau and Plato. Some of us worked hard to memorize the "Seven Cardinal Principles" for the inevitable test, and as a result, most came away with a teaching bias which leaned toward the pragmatic approach (if it works use it) and the tendency to teach others as we were taught.

At the elementary level, we generally gave more emphasis to the whole child while at the secondary level greater attention was devoted to the teaching of subject matter so that students could parrot back responses as we did. Many of us remember the lectures on the virtues of small group instruction, so when we were on our own we, too, talked in small groups but continued in reality, to lecture. Those who did work hard to think through a philosophy they could support often found themselves, during the first few days on the job, being indoctrinated to the mores of the local school. More likely than not the new school values didn't mesh with the idealistic set. Sooner or later, when the neophyte realized he or she couldn't "lick 'em", the option was to "join 'em."

This rather pessimistic and over generalized summary is still probably more typical than atypical. The notion of generating a philosophy was not wrong; the idea just did not work well. As we look to the future, though, there is a stronger need to define an operational philosophy and to match the activities of the school with that philosophy. The word in the preceding sentence which needs to be emphasized is "operational." Some schools do, indeed, have philosophic statements. Sometimes these statements are made in preparation for certain accreditation responsibilities and little else. Following the visit of the professional team, though, the principles are scrapped, and the practices of the school match the philosophy only by chance.

The school that will make an impact in the future is the one which matches rhetoric and practice. Perhaps one reason schools have failed to generate operational philosophies is that it is generally believed that only one philosophy is possible. It is obvious in our current state of affairs, (and will become more obvious as we move toward 1994) that different life styles are built upon pluralistic philosophies. In most schools, faculty members and parents align themselves either to the left or to the right of center. Little positive movement for change and improvement is possible because the twain seldom agree on principles. Some members on the right think students should take what is offered and be motivated on their own, and that homework should be plentiful; on the other side are those who believe children can be motivated if the learning objectives are relevant to the needs of the child and that hard work at school should be rewarded so that children need not be burdened with homework every evening.

Even getting the two groups to exchange ideas about their biases is sometimes difficult; where there are exchanges, however, the results sometimes involve confrontations and the opening of wounds which are nearly impossible to heal. No single operational philosophy is applicable to all situations.

Fortunately, some school districts have board members who are willing to concede that different philosophies make sense for different people. The Berkeley and Pasadena systems sanction philosophies that are pluralistic in nature; in these two systems, one can identify schools that might be characterized as very open and/or very traditional. We are obliged to think through our projections for the future and the subsequent requirements to organize schools in such a way that the challenges of today and tomorrow can be met. But where do we begin?

The Commission Approach

Special study commissions have been charged with considering what major revisions need to be made in existing institutions if they are to realistically meet the challenges. The President's Commission on Youth, the Kettering Foundation Study on Secondary Schools and the RISE Commission are all examples of the commission approach. The recommendation from the first two groups offer little in the way of major changes and improvement; indeed, both seem to give more attention to the "how" than to the "why." Perhaps this is why most of the changes that have been made to date in schools have revolved around logistical and material modifications. The two studies seem to be concerned primarily with helping students in school cope with the system as well as with helping those who are a part of the system cope with the students.

Gordon Cawelti, executive secretary of the Association for Supervision and Curriculum Development, has made a contribution to education by writing a booklet called Revitalizing the High School: A Curriculum Critique of Major Reform Proposals. Cawelti analyzes the following groups:

- Panel on Youth of the President's Science Advisory Committee
- Carnegie Commission on Higher Education
- National Commission on the Reform of Secondary Education
- National Association of Secondary School Principals
- National Panel on High Schools and Adolescent Education

He does more in fifty-two pages of his booklet than most of the original sources do when they are added together. Cawelti, an excellent curriculum person, calls attention to the shortcomings of the panel and commission's reports. Copyright restrictions prohibit an extended elaboration on the shortcomings, but they relate to such issues as the school climate, the futures orientation, specific content and learning strategies, and pertinent information about necessary change mechanisms. The reports have a few common threads, and some of the trends indicate an awareness of "effect" factors--if not causal factors--and what to do about them. For instance, the reports seem to share the following common notions:

- The current organization of high schools mitigate against interaction with people both older and younger. This same constraint is built in to other levels of our educational system.

- Homes and parents have less influence now on the occupation of the young adult than they did when we were largely an agrarian or industrial society.

- The media, particularly television, compete for the time of young people, and some of these media are more influential than formalized instruction in the schools.

- Students seem to be more worldly now than in past generations. In many states, students need not have parental permission to obtain the "pill" and/or abortions; the curricula do not reflect the social and value changes which have taken place.

Cawelti's criticisms of the reports seem justified; educators can write quite a few pages and say little. Many of the ideas in the reports were naive and simplistic. In addition, few people at the local sites--teachers, administrators and students--were asked to offer input. We cannot expect change to take place because people on the "outside" think they know best what ought to occur; using this tactic, we may find key improvements will be slow in coming. Only the National Association of Secondary School Principals had a large number of school people (other than professors and expert witnesses) sharing ideas.

A more valuable report was prepared for the Superintendent of Public Instruction in California. Wilson Riles, the state superintendent, charged a special commission headed by Leland Newcomer to come up with a set of recommendations which would help to bring about the reform and restructuring of intermediate and secondary schools in California. A group of distinguished educators and lay people was appointed by the superintendent to form what was called the RISE commission. The commission's first act was to call in a number of futurists to give perspective on the world today and the world tomorrow.

Before the RISE commission begain its difficult task, the members attempted to develop a philosophy against which decisions and recommendations could be judged. The philosophy is sound, and the fact that the commission thought first about generating a philosophy lends credibility to subsequent statements made by members of the group.

The philosophy statement is too long and complex to reproduce here, but these statements summarize the major ideas:

- We must learn how to learn
- We should have the skills to find work and succeed in it
- An education should contribute to self-understanding and self-esteem
- We must learn to care enough about the environment to maintain and improve it

- We must try to understand and appreciate all peoples and cultures without prejudice
- We must be able to read well, speak and write clearly, and handle comfortably both logical concepts and basic mathematical skills
- We must understand the American system of government, including citizens' rights and responsibilities
- We must understand the economic system and know how to manage money
- We need to know and understand human biology and psychology
- We should be sensitive to artistic, literary and other forms of esthetic experiences.

These philosophic principles are consistent with the thought that educators must take a look at the nature of people and then ascertain what the school as an institution can assume as its responsibilities. The schools cannot be all things to all people, but they can come closer to fulfilling their assignment if they subscribe to a set of meaningful philosophic principles.

The RISE commission calls for personalized teaching and learning at all levels; this is quite a departure from programs found in most intermediate and secondary schools.

The Personal Approach

This approach is similar to the suggestions offered by the RISE commission except that greater attention is given to the individual as opposed to the environment in which that person lives. Naturally, there is no precise division between people and their habitat, but the placement of emphasis tends to have an effect on the results.

This approach is described in papers titled, "The Person of Tomorrow" by Carl Rogers and "Education of Jeremy Farson," by Dick Farson.

Both papers attempt to project the new person and the educational requirements he or she will need. The Rogers paper was reproduced by the San Mateo, California, County Office of Education and the Farson paper came out of Assemblyman John Vasconcellas' office in 1967. One must turn to the originals to get the full impact of the documents' importance, but excerpts will indicate the nature of the authors' ideas.

> Rogers discusses learning and education in these terms: "He wants his learning to involve feelings, to involve the living of learnings, the application of relevant knowledge, a meaning in the here and now. Out of these elements he sometimes likes to become involved in a searching for new approximations to the truth; the pursuit of knowledge purely for its own sake is not characteristic of the new learners."

Rogers' comment is applicable to a situation described in a recent conversation with a parent who was discussing her son's failure in a U.S. history class. The parent was concerned that the child was investing up to two and three hours each evening memorizing facts and dates but at the same time developing few, "if any," concepts about the way a democratic society functions. This parent was not seriously concerned with grades, but she was agitated to learn that her son was not getting the foundation she thought he needed. This particular parent frequently goes out of her way to support schools and their missions, but she finds it hard, if not impossible, to support the practices she reported. Such an experience is not an isolated example; it is multiplied many times.

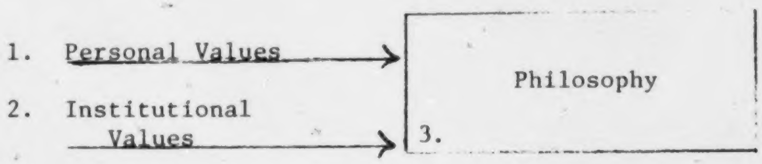
The Farson paper is written from the viewpoint of a Father thinking about the kind of education his as yet unborn child will need. In this context, the author explores the following substantive issues:

- The future of the human condition and education for humanness
- Education valued as experience, not only as preparation
- Education as a life-long goal
- Education as fun
- Education which includes noncognitive dimensions; experiences directed toward esthetic, sensory and emotional development
- Education in part; student designed
- Education directed toward constellations of people learning together in meaningful groupings
- Educators as facilitators
- Education not restricted to classrooms and courses.

Farson not only identifies what he believes should be, but he also addresses the issues of how to bring it about. It would be unfair to describe his ideas further, because justice cannot be done to his ideas when they are taken out of context.

The Do It Yourself Method

A third way of developing an operational philosophy is the do-it-yourself method. This is not nearly as hard to do as it was when we were enrolled in Education 221. There are no right or wrong answers, especially if one believes in the pluralistic concept. The chart below represents two necessary steps:



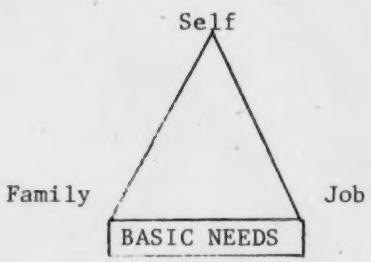
Determining Personal Values - Step #1 begins by reviewing one's personal values, asking the question, What values do I support? What beliefs do I feel strongly about? Some special experiences have been devised by Esalen, the National Training Laboratories and sensitivity training groups, for example. I can't support these approaches because in too many instances, people have been discouraged and disoriented by their experiences. Personal values are just that--personal and confidential--and should be looked at from an introspective position. They should be honored and private; they need not be shared with others.

Two personal and practical exercises are helpful when one determines values. These exercises are significant as one takes a look at both head (cognitive) and heart (feelings) influences. Sometimes we find a conflict between what we say we value and what we actually identify as important in our everyday experiences.

Lacy Hall, from the Stone Foundation in Chicago, has developed the instruments. In the first, he defines values as standards of desirability by which individuals choose between alternate behaviors; they are affective criteria; they are standards for feelings. Values are not attitudes; attitudes are standards from which values are formed; attitudes are feelings about people and objects. Values are not behavior traits; values are not needs.

With these points in mind, it becomes reasonably clear that values provide direction for decisions about behaviors and are, therefore, at the root of a personal philosophy. When schools are considered, it is necessary, then, to translate collective personal values into institutional values and, in the long run, specific operational philosophic principles.

The first instrument is designed to help clarify values important to the individual through analysis of experiences. (See Appendix A-1) The user jots down five particularly significant experiences that have brought special pleasure. After these experiences are identified, each is analyzed by checking against the statements in the left hand column of the tool. The summary of check marks supplies information concerning the user's basic needs as related to self, job and family as indicated in this chart:



The last four items in the list--having shelter, avoiding harm, having food and water and staying alive--are described by Maslow and Laswell as basic needs. Because most teachers and administrators and the rest of the middle class have these needs met, the categories are often taken for granted and are not checked. When this form is used with parents and students in schools in such places as Harlem and/or Indian reservations, however, the four items are checked with regularity.

A staff needs to know how congruent its values are with the values of other people associated with the school.

A stable, well-adjusted person has a profile showing X's supporting personal values for self, job and family. The self categories usually have to do with integrity and respect; the X's related to job usually follow the headings of achievement and learning; the items related to family have to do with loved ones. ("Family" has a broader interpretation these days because many people are divorced or have moved away from other members normally a part of the extended family. Family members today include professional colleagues, friends in the neighborhood and other close friends.)

The next tool is called the Five-Sort Value Inventory (see Appendix A-2). The instrument includes twenty-one clusters of values, each cluster containing five single words which suggest definitions. Each person uses his or her own definitions of the terms. As with the first tool, whatever comes out upon completion of the tool belongs to the person; no sharing with others is required, unless there is a desire to do so. The user ranks the value from 1 (the highest value) to 5 (the lowest). When the twenty-one clusters are completed, the summary grid is filled in by transferring the numerical scores for respective definitions. The numerical scores are totaled.

The values having the lowest point totals are the most important; the values having the highest scores are the least important. The five most important and the five least important values can then be identified.

Historically, the top and bottom values have been found to be consistent over time; people who complete the value instrument eight or nine times over a period of years find the same items receiving high and low rankings. The items in the middle are less reliable; they fluctuate depending upon reasonably current circumstances and influences. Educators often place emotional well-being, health and autonomy at the top of their priorities. Wealth, power and pleasure are often marked at the other end.

The experience instrument (the first tool) analyzes actual personal experiences and their reasons for being important; the Five-Sort Inventory requires the user to make intellectual interpretations of various values. By comparing the results of our judgments in the first instrument with the results of the second, we can ascertain how closely our intellectual values match those things we said were rewarding to us in light of experiences. If there is a congruence between the two sets of results, there is a good possibility we live as we believe; if there is not a good correlation, we should begin to ask why. In either case, the two tools enable us to get in touch with our personal values. The exercise should take about 90 minutes; it is the first of three phases requisite for generating a school philosophy. The second phase is to move from personal values to institutional values.

Determining Institutional Values - Presume for a moment that a number of people agree that emotional well-being is one of the top values among the twenty-one on the second instrument. But putting this value into the school may take some doing. In many schools, little thought is given to making the school experience satisfying to those who work and learn there. Little emotional well-being is possible in a place where the climate is negative and punitive.

Some years ago Charles Kettering III, established his personal foundation, CFK, Ltd., to study those elements which contributed to positive and negative school climates. Before he died in an accident, he stimulated educators in more than 600 schools to think about and to take action on plans to improve the school climate. This type of action does not require much money. As a matter of fact, the foundation was so small that Kettering often insisted on putting the word "very" between CFK and Ltd.

Those who belive in providing for emotional well-being, can obtain insights into ways of effective operation from the book School Climate Improvement: Challenge to School Administrators. (The book is available from Phi Delta Kappa in Bloomington, Indiana, or from the Nueva Learning Center, 6565 Skyline Blvd., Hillsborough, California.) For example, the book suggests three requisites for solving the problems--(1) materials and/or logistics, (2) processes, and (3) programs--and shows that the values of individuals need to be translated into institutional values.

Determining institutional values can be nonproductive because of extensive rhetoric unless certain precautions are taken. One instrument especially useful is a tool which underscores some major assumptions about students and how they learn in school. (see Appendix B)

Users are asked to examine each of the statements, marking an "x" at a spot along the rating scale which corresponds with their personal belief. After users have completed the instrument, they are then asked to re-read the statements, marking the scale with an "o" on a spot which corresponds with how closely they believe their school is coming to their earlier marked values. The two marks indicate what should be and what is.

The gap between the two marks is pertinent; the gap suggests an individual believes he or she should be functioning in one fashion but in reality is not. The second mark represents a perception--not necessarily a fact. Perceptions are what must be considered; we have the tendency to respond according to what we believe to be true rather than what, perhaps, is really true.

After the instrument has been completed by the users, the results are tabulated. Responses showing more than one step of deviation between "x" and the "o" are noted. (For example, see Appendix B.)

The tool provides both personal and collective information. When analyzed individually, the results say to the user: "The 'x' indicates how I value this particular assumption and my second mark 'o' reflects how closely I believe our school is coming to my personal value." One is able to compare one's personal assessment to the assessments of others in the group. Usually, a number of people agree on five or six assumptions where action should come closer to their personal beliefs.

A philosophy should be formulated on the basis of agreement, rather than disagreement. If the desire is to build trust, we should not try to take on, initially, those items where there is a wide divergence of opinion about whether something should or should not happen in the school. We spend far too much time on the negative rather than the positive; we should accentuate those areas where we have strong support for taking action.

The philosophy practiced should be global, something toward which people are aiming; that is, the chasm between the real and the ideal becomes the challenge toward which creative efforts of people are focused. A philosophy, then, is a statement which expresses a series of principles toward which the staff directs its talents. Keep the principles brief. Position principles can be stated in four words, for example:

- Learning Shall be Personalized. Each child has the right to a unique course of study which takes into account personal needs of the child. No children are at the same place at the same time.
- Share Decision Making. Those affected by decisions have the right to participate in making those decisions. In a school where shared decision making is practiced, power over the control of scarce resources is decentralized.
- Opportunities for Human Service. All people in school should have the chance to be of assistance to other people. This may be an exceptionally important principle at this time in our society.
- Positive Reinforcement Shall Prevail. Rewards instead of punishment shall characterize the institution.

These principles are some of the guides used at the Nueva Learning Center, but they should in no way be construed as the guides necessarily recommended for other schools. Each school's parents, children and staff together should formulate a specific set of principles.

Some educators do not believe children can (or should) participate in activities from which a philosophy is formulated. This is not true; even four-year-old children, when properly encouraged, can and will make contributions. In one session, we were trying to write about people having a right to try things even if those things failed to pan out as planned. A four-year-old commented, "Oh, yeah, I know what you mean--nobody's perfect!" "Nobody's perfect" became the working principle. The exercise of producing a realistic philosophy can be conducted within four to five hours. This presumes, of course, the use of appropriate tools and a leader who has the skills to direct the group.

After a philosophy is generated, plans must be made to match the activities in the school with the philosophic principles adopted. For example, a philosophic principle embodying emotional well-being, presuming it has been given personal value and is to be translated into an institutional value, might consist of four words: a success each day. This principle suggests that all in the school should have at least one successful experience each day, that the school should be organized in such a way that teachers, administrators, students, noncertificated staff--everyone--will find school a positive place. The staff will need to determine specific activities to make this possible. Conceivably, they might decide to set up

- Glasser-type room meetings,
- "appreciate" boards,
- shared decision making,
- learning celebrations,
- product displays, and
- recognition boards.

These are only examples; schools need to develop their own specifics. (Learning celebrations and appreciate boards are described in the book on school climate, i.e. Improving the School Climate: Challenges to Administrators.)

Two Other Approaches

Up to this point I have mentioned three ways to formulate a philosophy. At least two other techniques have been tried. One such technique is a sort of reverse model; that is, users work backward from a projection of tomorrow's careers and then by extrapolation generate an institutional philosophy. One document to use for this purpose is the March 18, 1974, issue of the Christian Science Monitor. This issue contains an entire section on "Careers for the 1980's"; articles range from experiences about alternative careers to suggesting that people take a year off with pay to be of service to the elderly. A problem with this technique is the tendency develops to wait around for events to happen and then to react to them rather than to control destiny by taking advantage of individual and group decisions and the options which come from these decisions.

One last technique is worth mentioning here; this comes from an economic model of the world covering the period 1900-2020 A.D. Computer experts have used historical data to plot future trends and from these trends they deduce the state of affairs in the United States as well as on the international scene. The method presumes that the newly developing nations, struggling to increase their industrialization, will go through some of the same growing pains that affect the United States; for example, big business, unions, taxes, import-export problems and so forth.

But history cannot be accepted as the point of departure. For example, one model attempted to do some projections on energy factors. This model used historical data and "guesstimates" to show that the energy crunch would not be a major problem between now and the year 2020; at the same time, the model projected the costs of energy to skyrocket. Our current empirical evidence would lead us to accept these projections. While it would be unreasonable and unwise to put aside the need to be concerned about energy, the computer projections failed to consider such sources of energy as the sun, the tides, geothermal steam and recycled carbon.

Perhaps the greatest quality of Homo sapiens is the ability to be flexible, adaptive and innovative. Because we have not yet begun to tap the real resources of the mind, there is no way to project with accuracy and objectivity what the future holds. We will need to settle for our best approximations and then make adjustments along the way. The economic computer model does not seem to be a viable model for the development of an effective philosophy.

Putting a Philosophy to Work

As a philosophy is generated, individuals and groups must be cognizant of the difference between the real and the ideal. A set of philosophic principles represents the ideal; the discrepancy between real and the ideal poses the challenge for the individual--in the school or in any other setting. It is this difference which helps to motivate people to make changes, but sometimes the differences are so great we tend to give up.

With this in mind, then, a philosophy needs to be exciting, imaginative and challenging, but if it is too idealistic some may give up before they begin. A number of constraints make the going tough. Some of these constraints are listed here:

Education as fun--The media and the polls indicate that some people believe that education can not and should not be exciting or fun. This thinking will not lead us far; certainly children are not in school to be entertained, but the relevancy of what is learned has little to do with entertainment. When people learn because they see a value in learning--because it has utility for the here and now--learning can be fun.

Clinging to the past--Members of the older generation believe that schooling should be the same for all students in subsequent generations. This may be over-stated, but the notion seems applicable to subject matter as well as to learning environments. This position is characterized by the statement, "If it was good enough for me it is good enough for my children." Is it? We neither want to throw out the strengths of the past, nor do we need to be locked into bygone days.

A simple example of this is the still prevalent practice of diagramming sentences. Research showing the significance and importance of this busy work is missing. Why, then, do we diagram?

- Fear of failure--Many educators have spent most of their professional lives trying to convince people that education is an outstanding endeavor; few are the educators who will admit there are simply many, many things they do not know (like how a child learns to speak and read). Some of our double-talk has been so persuasive that we have managed to remove our option to fail. If we are to legitimatize change and improvement, we will also need to legitimatize being wrong on occeasion--and admitting it. Most of us fear failure, but if we could somehow reduce the trauma of failure and realize we might be able to learn from our mistakes our risk quotient might be increased.

A few years ago in Midland, Texas, a few of us were working with some elementary school teachers who were toying with the idea of setting up learning centers in their open-space school. Our first day discussions were less than productive; rather than talking about ways to implement the concept, the teachers offered reasons for not setting up the center--too many children, not enough supplies, not enough time and inadequate facilities. After a day and a half, one of the more secure teachers identified the real problem--she really wanted to make the change but simply did not know how. Once we discovered the real problem, rapid progress was made, largely because the teachers were reassured by the superintendent, principal and others that some mistakes were to be expected.

- Fear of appearing overly eager--Somtimes dreams are not rewarded in our schools. If a staff member is willing to work beyond the regular hours and invest time in new ideas, other staff members, more often then one cares to realize, put undue pressure on the eager staffer. How often have we known people who have been motivated to attempt to get out of the rut, only to be put down by colleagues? The same reaction comes from schools that downgrade other schools attempting new programs. Critics from within the district are often far more punishing than critics outside the system.

- Fear of extremists--Sometimes it is hard to decide which extremist group causes the most difficulty--those on the left or those on the right. Unfortunately, both groups make it nearly impossible for anyone to take a middle position:

  > "If you are not one of us, you are obviously one of them."

  One of the presumptions of a democracy is that rational people will make rational decisions to overcome problems; clearly, some people are not always rational.

- Coping with Unmet Expectations--One of the real paradoxes in education has to do with the improvement and the elevation of expectations. Improvement begets improvements; but sometimes we are unable to maintain the momentum. When expectations are not met, the results are sometimes even worse than not addressing the issue at all. Some feel this way

> about many of the Great Society programs, some of the poor are more bitter now because the rhetoric of some super liberals raised expectations beyond the point where the expectations could be realized.

In short, education suffers from a double dilemma; we are damned if we do and damned if we don't. For some critics, it is impossible to do anything of merit in schools (even though some of local people have not been in schools in ages); too, there are some persons within the system who will do nearly anything to keep the boat from rocking.

Assuming it is possible to generate a philosophy and to match activities with the philosophic guidelines, we must then consider the barriers which stand in the way of change and then figure out how people can be motivated to overcome the obstacles. What are the motivating factors for change? Those who do attempt to change may be in for abuse from colleagues as well as extremists; that the climate is not especially amenable to failure; and that those who do try often find they must invest large quantities of time, talent and energy into activities which may not work. So why try?

We try because we must; we try because the challenge is there; we try because so many of us believe this world ought to be a better place for our having been here; we try because we realize the odds, as slim as they be, are on our side.

Educationally, we have at least five new inputs and a change in attitudes going for us. First, we have new and different kinds of people finding their way into the schools. These human resources--often in the form of paid teacher aides and parent volunteers--have helped to create a remarkable change in the attitudes of teachers and administrators about what can happen in the schools.

Second, we have new technology to help us. Teachers need not fear the new audo-visual equipment nor the computers; the machines can do things teacher cannot--and vice versa--and they can perform many routine tasks which free teachers to give more personal attention to individual children.

Third, there has been a quantum leap in the design and construction of facilities to accommodate learning.

Fourth, we are seeing the development of curricula which fill some of our obvious and glaring voids. For instance, many people believe positive self-esteem is an important goal for children. Only a few years ago, one had to search with a powerful microscope to locate specific programs to help children accomplish this goal. Today, new curricula such as the Magic Circle, Self-Science, Transactional Analysis, and Glasser Meetings provide at least some beginning structure. These programs are in their embryonic stages of growth and are, therefore, open to increasing controversy.

Finally, and probably most important is the change in attitude of people within the schools. Over the past fifteen years, the attitude toward change has evolved something like this:

15 years ago -- IT will never happen.

7 years ago -- IT might happen in that school over there, but it will never happen here.

NOW--IT can happen and we ought to make it happen!

CHAPTER VII -- GETTING STARTED

Whenever the prospect of change is in view, one question arises: "Where do we start?" Moving to an action stage is difficult. Some participants are satisfied with the mental titilation that comes from even a casual discussion of the futures issues; so satisfied that no action is required. Acquaintance which seems appropriate for social conversation, apparently soothes the pounding breast.

As integration efforts moved into full swing in the 1960's, leaders in the Palo Alto community knew exactly what action was needed in McComb, Mississippi, even though they had few thoughtful ideas for action about the volatile situation in East Palo Alto. Talking about the wrongs of McComb sanctioned the do-nothing activity attitude at home--talk replaced action. If improvements are to be made, systematic and meaningful planning and action are required; talk is not enough.

Schools anticipating tomorrow begin preparation yesterday. As preparation begins, the need for a logical format for planning, acting and evaluating becomes obvious. Schools are part of a bureaucratic system and it is hard for any bureaucracy to change.

James Conant surveyed the educational programs in our country some years ago finding educational offerings less than optional; he further pointed out how long it takes for schools to move from the stage of ideas to the stage of practice. Moreover, he compared medicine and education by showing the time-lapse between the now famous heart transplant made in South Africa and a replication of the same operation in the Mayo Clinic some two hours and twenty minutes later. Conant found the time-lapse in education considerably longer--fifty years from the ideas to the classroom.

Why Changes Are Not Easy

I believe these are three major reasons why education has been so slow making significant improvements.

First, we tend to take on problems after they become crises. Accountability and teacher certification are two such problems. In both instances, we should have projected the need to show others answers to serious questions. Unfortunately, we were unable to provide reasonable answers. Because of our inability to illustrate a positive relationship between expenditures and student outcomes, the keepers of the purse strings imposed on educators a variety of unreasonable criteria by which student growth is supposedly assessed. Neither position--that of the educators in the beginning and the current attitude of most legislatures--is justifiable. As educators, though, we have only ourselves to blame for not doing in advance what we knew was necessary.

The teacher certification issue is equally frustrating; certification guides in California is the case in point. Some years ago, the California legislators asked educators what would make sense in terms of certification requirements.

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Because educators could not agree, the infamous Fisher bill was passed, a bill so confusing that the author of the document often had difficulty interpreting what he had written. Who was really at fault?

There are other current and critical issues which are squarely facing us. For instance, the problems below need careful attention at this moment; sensible action is required. If we act now, rather than reacting later, we may be able to avoid a replay of our typical procrastination. The problems include:

- Teacher tenure
- Single salary schedules
- Athletic programs for women
- Interscholastic athletic programs
- Student bill of rights
- Violence in the schools
- Alternative schools
- Staff development
- Time to "think"
- Programs for the gifted and talented.

Each of the above is a serious phenomenon. Current policies and practices need to be rethought, changed, improved. Unfortunately, there are few instances where any of the issues is being attacked with vigor, although nearly everyone in and outside education agrees the problems are there.

One of these days the legislators--probably through a referendum so they will not have to take personal responsibility for the matter--will outlaw teacher tenure. As usual, we will be in the posture of looking back on what we should have done rather than projecting and taking appropriate action. (I am not trying to protect teacher tenure; I am suggesting that modifications would be sensible.)

Second, the magnitude of our problems and programs impose severe constraints. We have so many crises in our schools it is necessary to put a finger in the dike whenever a leak springs, but we have only so much energy to expend. This holding action helps decrease the "effects," but does little to correct underlying "causes."

For example, in one schooldistrict where I have been working, the incidence of violence, drug usage and assaults against teachers has risen dramatically over the past few years. To put the matter lightly, there are a few problems in the district. Survival is a key matter; during teacher orientation at the beginning of the year, there was little talk about meeting student needs, about new efforts in the social studies or about education and its purpose--the typical opening of school topics. Instead, the teachers learned about the latest techniques for student made zip guns; that is, they learned what to look for when students arrived on campus with small pipes, wooden blocks and long strands of wire.

Thinking about the future is impossible in this type of setting. So frustrating are the day-to-day survival problems that little time and energy is available to get at the causes of the problems. If the critics of education could participate in some of the survival activities in schools, perhaps their glib rhetoric would change a little!

In some other schools, however, so many activities take place that we are not able to perform them well. Both teachers and administrators in three states--New York, Illinois and California--recently reported that they had to manage programs for Title I, Title VII, Early Childhood, Mentally Gifted Minors, volunteer teacher aides and so forth. It is impossible to manage so many programs well; each area requires the preparation of different reports, the manipulation of different guiding principles and the blending of often conflicting philosophic principles. The end result, in the opinion of the teachers and administrators, often produces more frustration and anxiety than benefits to children.

Other teachers claim that many of the so-called individualized instruction programs are inoperable; they require more time than is available for the maintenance of growth charts for the class and profiles for individual students. Work with small groups of children is practically ignored. Individualized instruction is desirable, but the mechanisms needed for most plans are not available.

The point here, according to the people in the educational frying pan, is that we need to terminate some of the programs that have been started and to rethink which programs might have the greatest payoff. People in this camp believe more could be achieved by doing less. Unfortunately, to education, if not in nearly all other areas of our society, the terms "quality" and "quantity" have become nearly synonomous.

Third, we simply do not know how to initiate progress. This may be the hidden cause of our reluctance to consider positive change. Few of us care to admit we do not know something. For instance, few of us are likely to admit we do not know why we invert the fraction when we divide by another fraction, why some children know how to read when they arrive the first day at school, why schedule makers in most high schools decided that 45-55 minutes each day is the appropriate block of time for learning all subjects or why some children seem to learn best in an open environment and others seem to learn best in traditional environments. Some educators have reasonable answers to these questions; all educators should.

To our discredit, we have never legitimatized the right of educators to admit, "I don't know"; or "I don't know how." This is amazing for a profession which at least theoretically prides itself on helping others learn.

Points of Attack

Individuals concerned with the future and its implications for education have, generally, three points of departure: self, school, and school and self. Each of these requires a slightly different set of strategies.

Working on self is the most difficult place to start, but at the same time the most satisfying when results are positive. All of us tend to figure out ways to change others, but not ourselves. Where the future is involved, though, experience suggests the most formidable problem is getting started and becoming enthusiastic about the subject. Probably the effort will be a lonely one. It may be difficult to find other people familiar enough with the ideas to conduct a reasonably stimulating conversation; in fact, some may prefer not to deal with the subject at all. Their reaction may be similar to the reaction of some viewers of the film Future Shock, narrated by Orson Welles. They prefer to ignore scenes showing changes in life styles, mores and ways of viewing the world. In working with self, it may be necessary to alter cherished values--and to do something about those values and education.

It is important for schools to have leaders who can help others reach out toward desired goals. In this context, a leader is the keeper of the dream, helping others help themselves. A keeper of the dream must do his or her homework; appropriate background information is a prerequisite. Clearly, the leader is under increasing pressure, espeically since there is no right path to follow. Those interested in the future are writing the recipe book as the state of the art does not include a cookbook.

A more comfortable place for many educators to begin is with the school, including the audiences of parents, children and staff. Action here usually begins with rather general introductory exercises such as small rap sessions, writing to others to see what they have done, viewing films and conducting brainstorming sessions. Since a shotgun barrage usually isn't very helpful, a more calculated plan of attack may be in order.

There are advantages and disadvantages in the group movement. The advantages are: more people can be involved, more people can feel personal ownership for the process and task forces can be organized to take on different areas of study.

Disadvantages are: strong leadership is required, progress is usually slow, the group may go off on a tangent and participants may drop out as the work increases and the degree of interest decreases. To study the future, a subject with little immediate gratification, is exceptionally trying.

If the school is chosen as the unit of study, prior arrangements must be made. For example, irrespective of the plan followed, it makes sense to have a small steering committee or task force give direction to the project. This concept is not new to educators, and the organization of such a team should not be difficult. The teams should have prior instruction in such process areas as the Delphi technique, brainstorming, prioritizing and force field analysis.

These processes are useful tools as the futures study generates steam. Learning how to use the tools is imperative; if people do not want to learn basic skills, the chances of a long, productive study leading to positive action are poor. (Information on how to learn the processes is available from the Association of California School Administrators, 1575 Old Bayshore Highway, Burlingame, California 94010.)

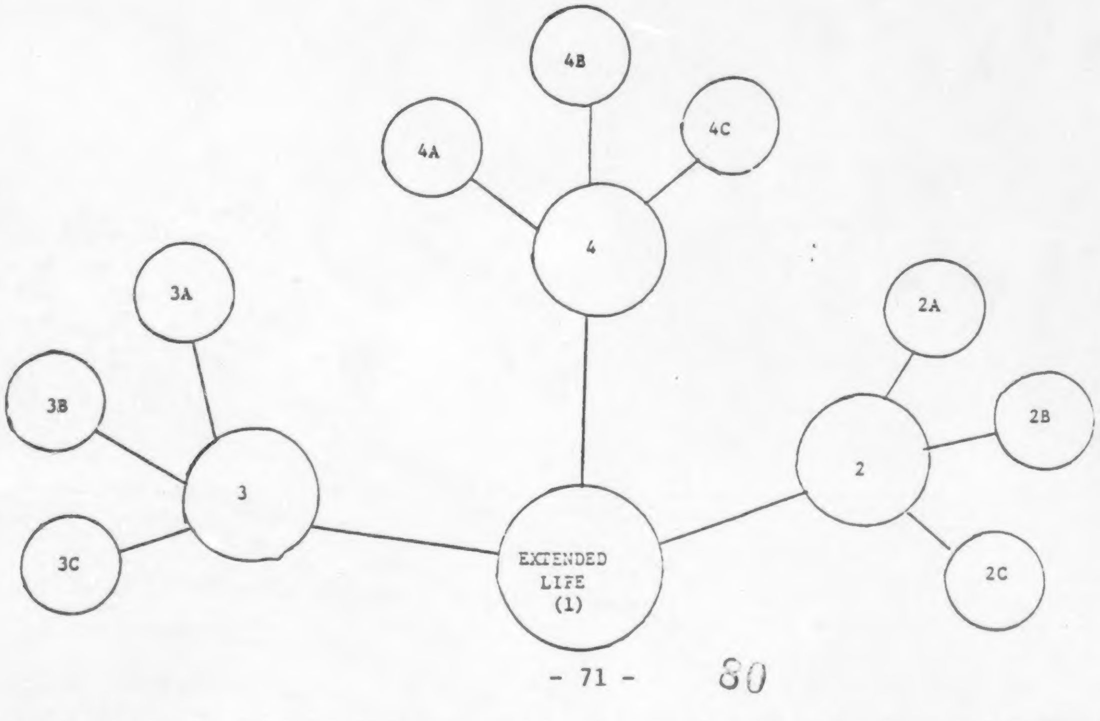
The Delphi process may be one of the most useful tools available for considering the future. This process was initially designed by NASA to plan and develop a particular phase of the space program. It has been used successfully in a modified version in a number of different schools as a method for forecasting the future. A description of the Delphi process is contained in Issue 8 of the Research for Better Schools' publication, Planning Schools for the Future. While the supply is available the October, 1975, issue can be requested by interested people. The address for RBS is listed in the resource section of Appendix C.) The process indicates the sequential steps involved in the forecasting process. Naturally, no forecasting method is better than the skillful insights the decison-makers bring to the process of planning.

The third arrangement for study is a combination of the two preceding alternatives. This alternative includes a study of both self and school audiences. Needless to say, this process is by far the most difficult but in the long run it may result in the highest level of productivity. Wherever the study begins, one needs to think about singular ideas and complex concepts while keeping in mind the total gestalt. There is a tendency to consider only pieces of the future, to think in terms of a specific issue under study rather than to recognize the parts as elements of the whole. Tunnel vision makes futures study easier, but it also causes us to become so narrow in our thinking that we may fail to see and comprehend the big picture.

One way to help everyone is to have limited focus participate in the "Concentric Spheres of Influence" exercise. The process indicates the influence a given area of study may have on other areas. Consider the issue of extending life-expectancy through the advancement of medicine. What might be the consequences?

First, users draw a circle in the middle of a chart and write in the topic under consideration--see (1) in the figure. Then consider and list the possible consequences. For instance, the following might be related to the issue:

CONCENTRIC SPHERES OF INFLUENCE



2. Need for food

    2A--Lack of available areas for planting and harvesting
    2B--Not enough food to go around
    2C--Decisions concerning who eats and who does not

3. Need for old-age care facilities

    3A--More social welfare programs
    3B--Construction of more facilities
    3C--Additional taxes to help care for the aged

4. Increase in support services

    4A--"Banks" for the replacement of body parts
    4B--Additional nurses and doctors
    4C--Special new "social concern" professions focusing basically on the aged.

This is enough to illustrate the ever expanding spheres of influence and the impact one medical advancement might have on the future. A discussion leader can help a participating group carry out the chart to a much higher level of sophistication. Projections outlined in the first chapter of the book also offer topics for the concentric spheres process. Theoretically, the exercise helps people comprehend the corelationships of factors. When the gestalt concept is understood, a major step in the right direction has been made.

A modification of this process is one referred to as the "cross-impact" approach or the "cross-matrix" design. This technique helps the user think of the potential influences two factors have on each other, especially when the specific factors may be in conflict. To consider the cross-impact data, simply draw a matrix which contains as many horizontal spaces as vertical spaces. A typical chart looks something like this figure.

CROSS-IMPACT APPROACH

TRENDS → ↓	Increase in Productivity	Unemployment Due to Advanced Technology	Reduction in Available Resources
Increase in Productivity	╳	Possibility of Further Inflation	Run Out of Resources
Unemployment Due to Advanced Technology	Additional Social Reforms Needed	╳	Advances in Technology Needed
Reduction in Available Resources	Need to Find Other Sources	Use of Leisure Time Increasingly Important	╳

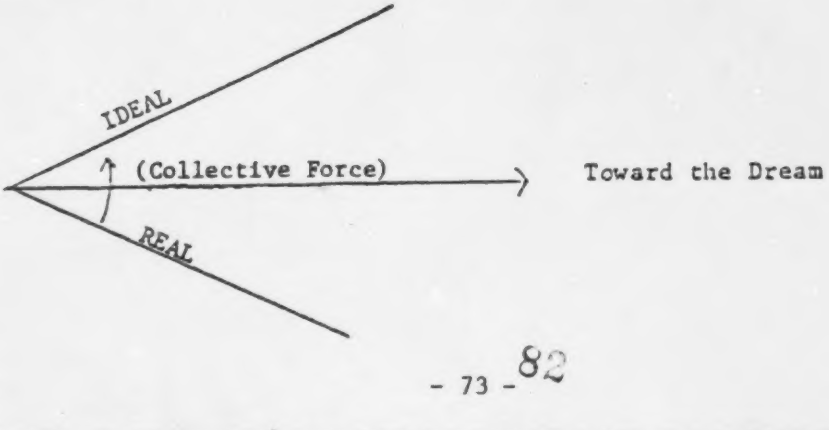
Not everyone will agree with the statements written in the boxes--but the purpose here is not to debate the correctness or incorrectness of the statements; the purpose is to illustrate another technique which can be used to show the relationship of two events.

One way to stimulate interest in futures study is to invite participants to a "Back to School Night" with the focus on the future. Goals for such an evening (involving parents, children and staff) include the following:

- Becoming familiar with the change process, for example, the Guba and Clark model developed at Indiana University.
- Becoming familiar with at least two media presentations emphasizing the projections of various futurists (see selections in Appendix C.)
- Developing a series of discussion questions for use with the media presentations, and questions on topics which may include educational and general issues.
- Reading and reviewing current literature on the topic of "futurism."
- Brainstorming "transition priorities" that might be initiated, and determining implementation strategies that might be undertaken to get at the priorities.
- Planning a strategy (in writing) for use in the school or district, taking advantage of the available human and written resources.

Early in the project, the leader ought to spend a little time with the participants, considering the challenge of the study. Participants with the wrong attitude become so overwhelmed with their findings that an incapacitating feeling of futility can arise. If participants understand, they are on the threshold of one of our greatest challenges, numerous untapped resouces can be found to produce latent, creative and imaginative solutions. They can enter the study with a sense of expected fulfillment. This feeling is similar, perhaps, to that felt by those who began the study to get the Astronauts to the moon.

When formidable challenges are addressed, it helps to keep in mind the rather simple notion illustrated in the accompanying figure:



The two straight lines, representing the "Real" and the "Ideal," are psychological strands found in all individuals and institutions. There is usually a discrepancy between the Real and the Ideal (or between "What is" and "What should be"). At point X in the diagram, the Real and the Ideal intersect. When this happens there is no motivation for change--attitudinally, people believe they have arrived. Some schools not only harbor this attitude, but go even a step further. They suggest educational systems would progress by returning to a position which held sway many years ago. Those who continue to insist we return to the basics are members of this group. In fact, we never left the basics; we have continued to explore new ways to do our job better.

At the other end of the psychological strand, though, people sometimes find such large discrepancy between the Real and the Ideal they can anticipate no way to close it. When this happens in institutions, progress comes to a stop. Members of the institution spend so much energy on the many issues at the ends of the strands, that they are unable to cope with the high priority issues and to make the required changes.

Any institution needs tension in the system if changes are to be made. Tension can be positive or negative. Negative tension causes pain; positive tension causes positive change. Direction for positive change comes from a collective decision to put scarce resources into top priorities which promise maximum payoff. The futures group, then, might well invest some of its early study time determining areas of agreement; hence, they can invest their time, talent and interest into areas of common interest and focus.

Realistically, few lay people or educators have been taught how to prepare comprehensive planning documents. Before launching a study of the future--whether an individual or a group--a planning document should be prepared. There are many useful planning tools; one is called "SPAR" (Self-Performance Achievement Record). This tool is easy to use, yet is comprehensive enough to offer definite guidance. (SPAR was developed by a team of members associated with the CFK, Ltd. Foundation)

For those not familiar with such a guide, both an individual and a group guide are included in Appendix D. The two completed guides are not meant to be all-inclusive; they simply reflect a few suggestions which might help point out a feasible route of study. Appendix D also contains a blank planning document that can be used for either individual or group study.

A change arises when plans such as SPAR are adopted. Some individuals or groups tend to operate as if the plans are the only correct routes; they fail to think through other plans which may be more consistent with their personal styles. People need plans for which they can assume ownership. The plan offered here is simplistic; it in no way represents the "one" correct approach. The process is what is important.

The top of the blank copy in Appendix D is easy to complete. Beginning with

Part II, the user is asked to list the activities that will be included in the study. Thought should be given to limiting the number of activities; when groups get together to brainstorm, invariably they come up with more activities than they can handle. No more than five or six major activities are ample; if a large group of people is participating, they can form different task forces, individual responsibilities are minimized. No activity should be undertaken for which clear objectives are lacking. That is, try to make certain, a priori, that the investment of time and energy will have results. Think about the outcomes (Objectives--Part III) that might be obtained from each of the activities. When possible, try to obtain at least two outcomes from each activity; this makes for favorable odds and enhances the chances of maximum payoff. Try to anticipate the outcomes by predicting evidence that will result from successful completion of the activities (Part IV). Look for evidence as the study progresses and abandon those activities that show little promise.

When taking on a study such as that of the future, there will undoubtedly be new areas of learning, for example, skills, attitudes and knowledge (Part V). Try to anticipate these areas and indentify sources of assistance. (The two hypothetical plans list potential sources; references in the Appendix C offer additional possibilities. Part V may be the most important part of the document. The greater the attention to this portion of planning, the greater the chances for a positive outcome.

Part VI is clear. Without at least some anticipated timelines, commitments to action may fade away. By having initiation dates and completion dates, a sequential plan of action becomes realistic. The timelines are "guesstimates"; they usually cannot be followed exactly, but they offer some clear indications of movement. When putting together a plan, one needs to keep in mind the other pressing dates found on most school calendars. Busy people get things done when they have deadlines to keep.

Any plan is only as good as the people who put it together, and follow it. While it would be presumptuous to design here a specific plan for each school site, I have listed a number of conceivable action steps that study groups might try:

- Read selected articles in such fields as medicine, space travel and technology.

- Read the reports prepared by the special study committee on the future working at the Research for Better Schools Laboratory (RBS) in Philadelphia.

- Review systematically the films on the future available from the Media Extension Center in Berkeley, California.

- Write to sources such as Tom Neel to find out what the Amphitheater School District in Tucson, Arizona, found in its Futures Study efforts.

- See the film, Chariot of the Gods, and discuss the film.
- Write to institutes established to study the future--such as the Stanford Research Institute--obtain from them position papers on completed work.
- Subscribe to the publication printed by the International Future Society or obtain a subscription to Futurology.
- Obtain back copies of Buck Rogers comic books and find out how many of the outrageous ideas are now integrated into our society.
- See a few science fiction movies to find out what is being projected for the future by the sci-fi authors.

As the plan begins to unfold, try to offer some culminating experiences where the participants have a chance to share their new ideas. The kind of collegial rapport which comes from this exchange is exceptionally valuable. Peak experiences help to give members of the study group the strength to continue their hard work. As stimulating as the study may be, people need to celebrate intermediate steps of accomplishment, thereby enhancing the needed psychological closure.

Different people will come to different conclusions about where we are headed. Further, there will be differing opinions about what can be done to ward off some possibilities while promoting others. Clearly, futures studies are in their embryonic stage of development. Even so, a number of educational models are emerging.

CHAPTER VIII -- FOLLOWING THROUGH

Getting started is easy compared with the difficulty of following through. Some of this difficulty stems from the fact that constant changes in society require reasonably constant changes in approaches. Kenneth Boulding has said that change is occurring so fast we will need to make more adjustments in the next twenty-five years than we have made in the past twenty-five thousand.

The problem posed by this constant shifting makes it necessary for us to devise a game plan which is flexible enough to accommodate departures from a prescribed path. Somehow we need to use the best of what is available from the behavioristic fields--for example, PERT, Management by Objectives (MBO), accountability and so forth--but still not let these tools dictate to us when, intuitively, we prefer other routes. New data are available almost daily, and new data often call for new decisions and new directions.

Some new data are scientific in nature. Two recent news reports offer examples the first describes the discovery of a synthetic product to replace burned or otherwise destroyed skin or worn out or otherwise destroyed blood vessels in mice. Rejection problems so often found in transplant operations was overcome. If this substitute proves effective with humans, there is a good possibility (when it is used in conjunction with other medical discoveries) that the span of life expectancy will increase even further.

The second item reported was more frightening than fascinating. The United States and Russia are rapidly approaching the point where both world powers will possess a laser beam capable of destroying everything in its path. For all practical purposes, the laser gun is the same as the ray gun Buck Rogers and his foes used to carry. These two topics and their potential implications could be examined using the cross-impact matrix approach described in the previous chapter.

Not all changes arise from specific scientific discoveries. Dan Moore, exceptional humanist and consulting editor for the Los Angeles Times-Mirror, often told the story of a younger colleague who was considering joining the company's retirement plan:

> "He came to me holding a letter. His question to me was: 'Do you think I should join the company retirement plan?' (It is an excellent plan and I had never considered not joining it myself.) We sat down and 'reasoned' together.
>
> "The young man showed me the letter which stated how much his monthly contributions would be; how much he would get at retirement (75% of his salary); and the date of his retirement--2011 A.D.! His reasoning went like this: By 2011, and probably sooner, he would have social security.

> Medical care would be free. His wife could get a job even easier than he, and could earn as much. His children would be 18 in 1990 and 1991, respectively, and free education at all levels would be available. Finally, he was not at all sure he would still be on this planet in 2011. Nor was he sure the company would be. And he, in fact, did not join the retirement plan."

This true story shows an attitudinal change not dependent on a particular scientific discovery. As I have interviewed people for jobs over the past fifteen years, there seems to be a sharp decline in the number of people who ask about prospective fringe benefits and retirement plans. (This change conceivably, may have more to do with the limited job market than a change in attitude.)

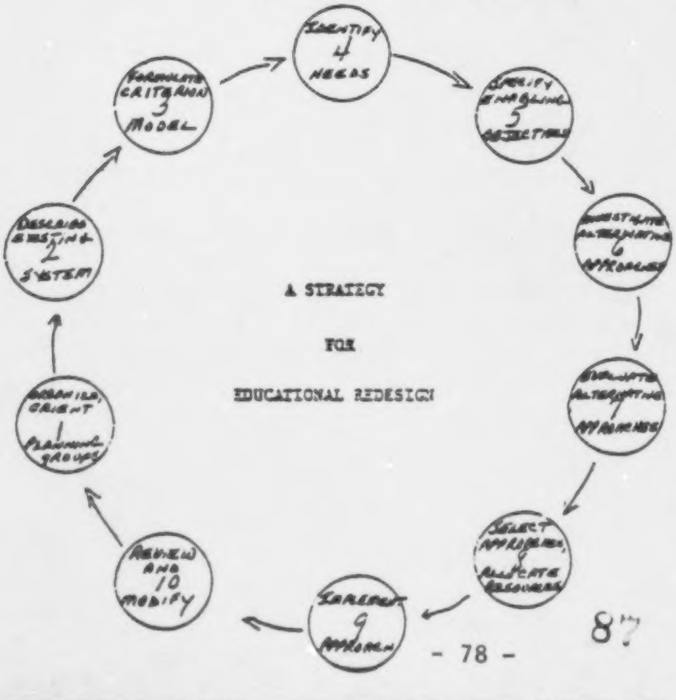
Schools are ancient, yet ill-defined. During the fifties and sixties, many efforts were made to change what was to what could be. As Marvin Silberman has claimed, many pieces of the total pie were changed but the schools remained basically unaltered. I believe Silberman's generalization is true--but it need not be. Part of the problem has to do with where and how people begin the change process. When people change pieces of the whole (as was the case with many Title III and national foundation projects), the pieces can be altered within the freedom of limits defined by the system without truly revamping the system.

I will suggest two models for changing the system. Theoretically, the models enable users to make total-systems change. In some districts, parts of each model have been modified and adopted for local-site needs.

Palo Alto Model

The first model is used in Palo Alto, California, as the guide for their educational Redesign Project. Pictorally the model is illustrated below.

PALO ALTO MODEL FOR CHANGE


Identify 4 Needs
Specify Enabling 5 Objectives
Investigate Alternative 6 Approaches
Evaluate Alternative 7 Approaches
Select Approaches, 8 Allocate Resources
Implement 9 Approach
Review and 10 Modify
Organize, Orient 1 Planning Groups
Describe Existing 2 System
Formulate Criterion 3 Model
A STRATEGY
FOR
EDUCATIONAL REDESIGN

Note that the model is continuing; that is, answers are not gleaned from a one-shot experience. Study is on-going; adjustments are necessary frequently.

The activities and responsibilities do not provide enough direction to make the model one which can be utitlized by those unfamiliar with it. For this reason I have paraphrased suggested objectives for each activity as well as suggested questions that might be considered.

Step 1

Objective: To organize and orient planning groups that are representative of the total educational community.

Questions:

- Who should be included in the planning?
- How will participants be selected?
- What preparation is needed for people in the group?
- How shall decisions be made?
- Are the groups advisory or decison making?
- What skills do members of the groups need?

Step 2

Objective: To describe and establish a picture of the existing system which has reasonable consensus of acceptance.

Questions:

- What are the positive features of the system?
- What are the problem features?
- What fiscal and human resources are available?
- What constraints are imposed on the system?
- What things should happen in the system that do not happen?

Step 3

Objective: To design a model of an ideal school system.

Questions:

- What philosophic guides are applicable?
- How should outcomes be evaluated?
- How could the system be financed?
- Are pluralistic philosophies acceptable?
- How can current constraints be reduced or eliminated?
- What human resources are required?
- What should be done with the facilities that are no longer usable?
- How can others in the community be aware of potential changes?

Step 4

Objective: To identify needs by noting the discrepancy between what is and what should be.

Questions:

- What are the major discrepancies?
- What are the minor discrepancies?
- What are the discrepancies for which there is general agreement?
- What discrepancies should receive priority attention?
- What timelines for getting at priority consideration are applicable?

Step 5

Objective: To formulate objectives for reducing or eliminating discrepancies between the existing model and the criterion model.

Questions:

- What objectives are relevant and feasible?
- How are the objectives related to student learning?
- What performance measure(s) should be used for each of the enabling objectives?
- What criteria are accepted as evidence of successful achievement?
- Who should be involved in the preparation of the objectives?

Step 6

Objective: To determine existing and future approaches for achieving the selected objectives.

Questions:

- What existing approaches (any place in the country) are available for helping to achieve the enabling objectives?
- What are new approaches that might be tried?
- How can alternative approaches be generated?
- What are the advantages and disadvantages of selected approaches?
- What resources are available to study potential resources?

Step 7

Objective: To systematically evaluate alternative approaches.

Questions:

- What is the estimated effectiveness of each approach?
- Who would carry out the responsibility for each approach?
- What are the cost-effectiveness relationships between the approaches and the objectives?
- What additional data are necessary before final choices are made?
- How shall the recommendation be made to decision makers?
- What strategies are pertinent for getting others to join the change team?

Step 8

Objective: To select the most reasonable alternative for achieving the objectives and allocate resources.

Questions:

- Which alternatives are already operable within the existing system?
- Which alternatives have a good possibility of being accepted?
- What budget reallocations might be necessary to meet the requirements for selected alternatives?

- What alternatives are available in existing fiscal and human support services?
- Which alternatives are acceptable?
- What fiscal and human allocation should be made toward each alternative?
- How can the alternatives be protected long enough to really test them?
- How can we avoid the tendency to protect alternatives when they do not prove effective?

Step 9

Objective: To implement the selected alternatives.

Questions:

- What is the planned time schedule for implementing the choices?
- How can the system be prepared to accept the alternatives?
- Who is responsible for implementation?
- What are the plans for collecting effectiveness data?
- What are the plans for collecting cost data?
- Who decides if alternatives are cost effective?

Step 10

Objective: To review the cost effectiveness of each approach and to make appropriate revisions.

Questions:

- What objectives are being achieved?
- What objectives are not being achieved and why not?
- How closely does the actual approach match the conceptualized approach?
- What new knowledge has been gained that will be helpful in planning future cycles.

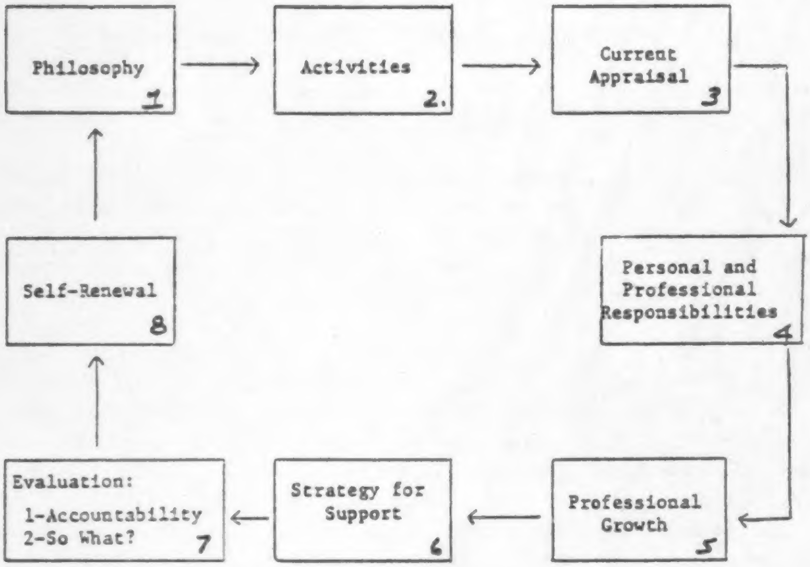
This model has many strengths; it offers a systematic series of steps which fit together in such a way that participants can see where the road is taking them. There are sign-posts along the way; detours are obvious. (This is not to suggest detours should not be made--quite the contrary. But participants should be aware of diversions so they do not get so far away from their real task that they fail to return to their mission.) The model has built-in mechanisms for finding congruent opinions and legitimatizing modification options. The model is flexible, allowing for new input.

Recent experience with kindergarten programs illustrate why this type of model is essential. In 1975, James Hymes, Jr., wrote a small booklet entitled, Early Childhood Education: An Introduction to the Profession. He described how the states have become more and more involved with education of young children. As recently as 1957 only 46 percent of the states had kindergartens sponsored by state funds; by 1975 only three states--Mississippi, South Dakota and Idaho--had none. Some states were so concerned about getting Head Start and kindergarten programs started they often failed to consider childrens' stages of growth and development, and the programs implemented reflected this oversight. To satisfy accountability-minded legislators and vocal parent groups, the main emphasis in ill-defined programs was placed on readiness activities. Why is it that, even at the early childhood level, some educators are intent on getting children ready for something else, i.e., first grade. No one can convince me it was possible to inaugurate quality Head Start programs in July 1965 when there were no programs in, even on paper--January of the same year. Many of these programs were touted as child development centers, but were really reading centers, preparing children to take on the challenges of reading in the first grade.

Without appropriate models for planning and implementation, we will find the same misuse of resources in child abuse programs, parent education and other so-called reforms. In terms of priorities, I cannot think of many programs more important than parent education. The greater the stress on parents, the greater the likelihood they will react negatively--physically--to their children. Aletrice Martin, early childhood authority, says children who fight each other do so because they have been taught by their parents that phsysical abuse is an acceptable behavior pattern. More succinctly, says Martin, "Children hit when they have been hit." If the programs are to make sense, considerable planning is needed--and realistic models can be helpful.

The Nueva Model

The second model is one in use at the Nueva Learning Center. There are eight steps in this model (see accompanying illustration).


Philosophy 1
Activities 2.
Current Appraisal 3
Personal and Professional Responsibilities 4
Professional Growth 5
Strategy for Support 6
Evaluation: 1-Accountability 2-So What? 7
Self-Renewal 8

I have already discussed the first two phases of this model in Chapter VI, "Generating a Philosophy." The reader may find a review of that chapter helpful as an introduction to the remaining elements in this model.

As with the Palo Alto design, this model should not be considered a one-time structure. At Nueva, each step in the sequence is an annual undertaking.

Once the philosophy has been discussed and accepted (box 1) and the activities (box 2) have been brainstormed and prioritized, a review of the findings from the current appraisal (box 3) is made. Students, parents and staff participate in this activity. Data for the review are obtained from answers to four open-ended questions; namely:

1. What activities at Nueva are exceptionally good?
2. What activities are good, but which need further refinement to make them exceptionally good?
3. What activities should be dropped, discontinued?
4. What are the activities not currently included in the offerings that should be added to the Nueva program?

The data gathered from this procedure are compared with the prioritized activities and annual listing of desirable student experiences is determined. Unfortunately, these desirable experiences are simply paper ideas unless staff members implement them. This leads to the next step in the plan-action-evaluation model (box 4).

At this point, staffers determine their personal and professional responsibilities for carrying out the agreed upon changes. All staff members, e.g., administrators, teachers, specialists, aides, psychologists and secretaries prepare their personal role responsibilities for implementing the desirable experiences. Occasionally, some experiences are desired but they cannot be implemented. When this is the case, the suggestions are generally eliminated from the list. No school can be all things to all people.

Staff involvement at this point results in a personal and professional commitment to action. Individual personal statements are put into a single document as a pledge to parents and children. These public and explicit statements help parents know what the school staff will be attempting during the course of the year.

Invariably, staff members find they want to implement experiences for which they do not feel especially well prepared. The need to learn new skills and attitudes and acquired knowledge becomes apparent. To help with this, each staff member prepares a growth plan (box 5). The plan is designed to aid the individual in the acquisition of new professional tools. We can all learn; when we do we not only enhance ourselves but we build a large reservoir of possibilities for helping students. A modified version of the SPAR professional growth plan (see Appendix C) is used by the staff to facilitate the development of a growth plan.

Both individual and collective (institutional) growth is desirable. That is why a strategy for total school growth also needs attention. This part of the model (box 6) is included as a safeguard for the institution to ensure against stagnation. (Other schools sometimes call this concept "Staff Development.") Periodically, outside consultants may come in to share ideas. For example, consultants have addressed such topics as creativity, reward incentives, qualities of teachers who work well with gifted and talented children, shared decision making and issues for the future. Since change takes time, working with a consultant over an extended period (say, eighteen months) is much preferable to the mode that expects attention to get instantaneous solutions to complex problems.

Reasonable evaluation (box 7) should also be a part of any useful planning model; sensible assessment can produce modifications, deletions, changes and improvements can be made. At least two kinds of evaluation are required--annual and long-range. Annual evaluation is intimately related to the notion of accountability. That is, by checking personal and professional responsibilities against earlier stated anticipated evidences, members of the school populations are able to ascertain how closely actual performance matched the earlier stated expectation.

The annual evaluation is normally made near the close of the school year--in May or June. The end product of this accountability evaluation is a document for the school audiences called "The State of the School" report. This document can be written to enhance credibility between the school and the home. Credit should be taken for positive outcomes, and candor should be exercised when noting those expectations not reached. The report provides a follow-up to the earlier statement on anticipated expectations for the year.

Accountability is necessary, but it is not sufficient. Questions of accountability help people know how closely they have come to their expectations, but accountability answers do not give feedback on the more difficult questions. For example, the "so what?" questions. Conceivably, a school staff can be extremely accountable without being effective. The evaluation for accountability is made in terms of stated personal and professional responsibilities; the "so what" issues are considered in terms of the guiding principles in the philosophy. These so what questions are on-going and long-range; a period of at least five years is needed to get a fix on trends and directions.

For most schools it is necessary to communicate with students and their parents many years after they have left the local school. (Nueva, for example, has a thirty-five year longitudinal study.) Although it is not necessary (or especially feasible) to contact each student each year, a good practice is to contact the students the first year after they leave the school and then each five years thereafter. Accountability questions need to be considered because without them there is no base for determining future, further directions. Both the accountability issues and the long-range issues are included in realistic school evaluations.

Finally, time for self-renewal (box 8) should be a part of the system. Staff members must have time to think, plan, analyze, discuss and act. The work required to produce personal and professional responsibility statements is an exercise in futility if the ideas are put together at the beginning of the year and then forgotten. Ideally, at least three full days at the beginning of the school year, a couple of days at the start of the winter and spring breaks, a specific day each school month and an additional two days at the close of the year are needed to make the model operational. Time at the winter and spring breaks. and at the close of the year, is important for staffers to review personal and professional responsibilities, to write interim reports on accomplishments, to adjust expectations in light of new information and to work out problems of program implementation. These periods give people the opportunity to "zero in" on areas of concern and to recharge and re-focus their energies.

In Retrospect

If my own projections for the future are accurate, the time for our planning and acting is now. The projections are based on the assumptions we will be able to,

- intelligently foresee the lead indicators of the new age so we will know what kinds of new institutions are called for,

- have the courage to carefully and humanistically dismantle the old institutions before they crumble and fall and take us with them,
- reorient our view of change--seeing it not as an enemy, but as a friend.

Forecasting

As for forecasting, the lead indicators call for us to do the following:

- make contact with parents during the child's infancy and preschool years and to offer within the educational context an effective and comprehensive parent education program.
- involve parents at all levels of learning so parents will understand and support learning alternatives available to their children.
- upgrade all levels of teaching and learning to provide the kinds of structural flexibility for implementing noncompetitive, diagnostic/prescriptive learning opportunities.
- reduce the adult-child ratio to at least 1-8 by including paraprofessionals, older students, peers and others in the formal education scheme.
- maximize the master teachers' skills and experience (and the associated rewards) by creating objectives and materials that can be implemented by non-professionals under a teacher's supervision.
- utilize places outside the four walls of the classroom where direct experiences can be substituted for vicarious experiences.

By restructuring our learning centers to test the recommendations above, hopefully some major modifications will occur internally. These modifications should ensure that:

- Efforts will be made to help children acquire the basic learning and communcation skills. In addition to the traditional 3 R's, the skills of listening and viewing should be added. We live in an increasingly oriented audiovisual, technological world. Children should also be taught to use typewriters and calculators, tools especially helpful in the future.

- Children will be helped to learn to retrieve and process all kinds of data. Memorizing facts in a world where knowledge doubles each decade and where we have access to information blanks is obsolete.

- Children will enter early education experiences with a strong desire to maintain enthusiasm for learning throughout their lifetime. We will continue to live in an age when the desire to learn and the joy of learning are vital concepts for effective and happy people.

- Children will be able to retain their innate creativity throughout their life. Creativity is supressed in the first five years of life and in the first few years of formal education. Highly competitive school programs foster the supression.

- Children will learn to feel positive about themselves and others. Self-esteem needs to be a top priority item with specific programs directed at this elusive but important quality.

- Children will learn love. Love is to be given and received. I cannot imagine the society in which love has become obsolete.

- Children will learn to be reasonably secure in a world which they know they can never control, never really completely understand and with events that can never be predicted with certainty.

People were never created to be secure or to be totally well adjusted, but then people are able to solve problems. To this point, in the history of our world, people have responded well to adversity.

Many articles are being published these days on the subject of the future; frequently, however, they are found in out of the way places--at least where educators are concerned. Almost every so-called discipline has a magazine or journal; invariably these contain specialized articles on the future. These are places to start.

ERIC contains a few helpful generalized articles; a recent search there produced thirty-two documentations. One ERIC selection helpful was Robert C. North's, Alternative Futures for Society: Certain Variables and Parameters. The author states that reform must begin at both the personal and system levels, that we must realize how we are caught in systems within systems and that only by responding to these systems can we bring about change. This document is listed under the ED058107 heading.

For other items available from ERIC on the topic of the future write: ERIC Clearinghouse on Educational Management, University of Oregon, Eugene, Oregon 97403. A bibliography produced for the December, 1974, isssue of "The Best of ERIC" is quite good. This newsletter-type publication lists twenty annotated entries and the sources of the original documents. The annotations themselves are useful. They give pertinent information about the questions the writers raised while forming their individual perspectives.

Another listing in ERIC is entitled Future Documentation Projects Worldwide: Provisional Annotated Listing, August 10, 1971. This booklet, put together at the Educational Policy Research Center in Syracuse identifies people and projects focusing on the future. Admittedly incomplete at the time of its printing, the researchers were able to locate forty-two places they felt should be included.

One key source is the World Future Society. This organization holds annual meetings and publishes a Bulletin, available in most good libraries. The future discussed usually is not a distant date like 2025 A.D., but a date like 1995, well within the lifespan of most of us.

In the past four years I have accumulated some 400 separate articles, position statements, mimeographed materials and books on various futures topics. The resources were gathered by checking the table of contents in different journals found in most school libraries. One article found through this procedure came from the March, 1973 issue of the Saturday Review of Literature. In the article, a variety of personalities commented on the topic "How Will We Raise Our Children in the Year 2000?" The personalities included Gloria Steinem, Nikki Giovanni, Billy Graham, Urie Bronfenbrenner, Abbie Hoffman, Elizabeth Janeway, Catharine Barrett, Bruno Bettelheim, George Leonard, Bobby Seale, Margaret Mead and Isaac Asimov. The opinions of the radicals and conservatives were not dissimilar. Mead, Bronfenbrenner and Asimov are well known for their concerns with the future. Asimov, for instance, has written extensively. His interests range from concerns about "Tomorrow's Energy" written for the Summer, 1975 American Airline Magazine to the idea of using pills to increase the rate of learning potential and the rate of learning in a recent issue of the Saturday Review of Education.

An unlikely but reliable source of information for most educators is Nature Magazine. The August 4, 1972 issue contains an article entitled "World Dynamics: Social Feedback May Give Hope for the Future." This brief article takes a look at some of the world models derived from system dynamics. Up to date, most of the computer-projected models have supported pessimistic views about the days ahead. With additional social feedback, however, there is a good chance things may not be as bad as computer models have made them out to be.

Those who have generated computer projections have generally studied the relationship among population, capital investment, natural resources, pollution and capital investment in agriculture. These elements are similar to those Harman mentioned as significant. Some years ago, a group of eminent scientists, sociologists and scholars from all over the world and representing many disciplines organized the Club of Rome for the purpose of checking the predicament of the world over time. As time passed and as new social input was provided, their early gloomy projections were modified. There are people now who are devoting a good portion of their professional lives to the review of the computer programs as well as to the tentative conclusions produced. This illustrates the seriousness of purpose concerned people in the world are giving to an increasingly relevant subject.

Of particular importance relative to the idea of personal responsibility for the future is the book by Kenneth E. Boulding, The Future of Personal Responsibility. Boulding discusses behavior standards, group norms, personal values, social development and social responsibilities. The publication is provocative in some spots as well as controversial.

The following books and articles are also worthwhile:

Alvin Toffler, Future Shock (Random House)

Harrison Brown, The Next Hundred Years (Viking Press)

Daniel Bell, Toward the Year 2000: Work in Progress (Houghton-Mifflin)

Willis W. Harman, "The New Copernican Revolution," Journal of Humanistic Psychology, 1969

Herman Kahn and Alfred Wiener, The Year 2000: A Framework for Speculation on the Next Thirty-three Years (MacMillan, 1967)

A magazine called The Futurist is available by subscription. Some articles appear to be written for their shock benefit because the way the articles are written it is difficult to sort out those subjects that are fact and those that are fiction. Fiction too quickly becomes fact in our every-changing world.

Outstanding sources of assistance are the Institutes for the Future; their addresses are located in Appendix C. Both have prepared extensive bibliographies from pre-published materials as well as bibliographies based upon studies of their own. Listed below is a partial bibliography available from the institute in Menlo Park, California.

R-16. The Future of Newsprint, 1970-2000, by Paul Baran, December 1971, 66 pp. A Special Industry Report.

R-17, Some Developments in Plastics and Competing Materials by 1985, by Selwyn Enzer, January 1971, 72 pp.

R-19, A Framework for Community Development Action Planning, Volume II: Study Procedure, Conclusions, and Recommendations for Future Research, by Harold S. Becker and Raul de Brigard, February, 1971, 134 pp.

R-20, The Future of the Telephone Industry, 1970-1985, by Paul Baran and Andrew J. Lipinski, September 1971, 180 pp. A Special Industry Report.

P-23, On the Nature of Economic Losses Arising From Computer-Based Systems in the Next Fifteen Years, by J. R. Salancik, Theodore J. Gordon and Neale Adams, March 1972, 140 pp.

R-24, Federal/State Science Policy and Connecticut: A Futures Research Workshop, by Selwyn Enzer, October 1971, 68 pp.

R-25, Some Prospects for Social Change by 1985 and Their Impact on Time/Money Budgets, By Selwyn Enzer, Dennis L. Little and Frederick D. Lazar, March 1972, 145 pp.

R-26, Potential Market Demand for Two-Way Information Services to the Home, 1970-1990, by Paul Baran, December 1971, 139 pp.

R-27, On the Future State of the Union, by Olaf Helmer, May 1972, 130 pp.

R-32, Group Communication Through Computers, Volume I: Design and Use of the FORUM System, by Jacques Valle, Eubert M. Lipinski and Richard H. Miller, July 1974, 125 pp.

WP-2, A Case Study Using Forecasting as a Decisionmaking Aid, by Selwyn Enzer, December 1969, 48 pp.

WP-4, Selected Urban Simulations and Games, by Mark Nagelberg and Dennis L. Little, April 1970, 30 pp.

WP-6, Models and Simulation: Some Definitions, by Dennis L. Little, April 1970, 23 pp.

WP-11, Toward the Institutionalization of Change, by Albert Wilson and Donna Wilson, August 1970, 41 pp.

WP-19, Toward a Framework for Communications Policy Planning, by Andrew J. Lipinski, December 1971, 41 pp.

P-9, Comparison of Delphi Forecasting Studies in 1964 and 1969, by Robert H. Ament (Published in Futures, Vol. 2, No. 1, March 1970, 10 pp.) [reprint]

P-13, The Construction of Delphi Statements, by J. R. Salancik, W. Wenger and E. Helfer (Published in Technological Forecasting and Social Change, Vol. 3, No. 1, 1971, 9 pp.) [reprint]

P-15, Cross-Impact Techniques in Technology Assessment, by Selwyn Enzer, September 1971, 42 pp.

P-16, The Social Responsibilities of Business, by Roy C. Amara, April 1972, 24 pp.

P-20, Toward a Framework for National Goals and Policy Research, by Roy C. Amara (Published in Policy Sciences, Vol. 3, 1972, 11 pp.) [reprint]

P-22, Methodology A Note on Cross-Impact Anaylsis: A Calculus for Sequence-dependent Events, by Roy C. Amara (Published in Futures, Vol. 4, No. 3, September 1972, 5 pp.) [reprint]

P-23, Social Indicators, Policy Analysis and Simulation: by Dennis Little (Published in Futures, Vol. 4 No. 3, September 1972, 12 pp.) [reprint]

The institute in Westchester has a similar bibliography, available by writing directly to Dr. Herman Kahn.

The public policy groups at the Stanford Research Institute (home of Willis Harman) and at Syracuse University have additional bibliographical references. The organizations commissioned special papers for special purposes, and some of these papers are now available to the public.

Another center for futures planning is in Hawaii. In 1970, Hawaii's legislature created the Commission on the Year 2000. This commission, administered through the Center for Governmental Development in the College of Continuing Education and community Service at the University of Hawaii, has been hampered by a lack of funds. They have, however, sponsored a statewide futures planning conference. The report of the organization is worth reviewing if only to see how it went about its task.

Not all resources on the future are publications. The best single source of nonprinted materials--films--is found at the Extension Media Center in Berkeley, California. The EMC is partially sponsored through funds from the University of California in Berkeley. The center has gathered perhaps the most complete film library on futures topics found any place in the world, going outside the United States to obtain films on specialized topics. Films on biofeedback, ESP, alternative communication systems and other specialized topics are included in their collection.

A large number of films have been sponsored by the Canadian government. This developing country obviously has a keen interest in exploring alternatives; the government apparently believes others can become aware of options through the film medium. The EMC publishes a futures catalog and both sell and rent films.

Because educators are more likely to read materials written within the context of education, I have listed below some readings which I believe to be of particular interest (entries marked with an asterisk are consistent with my own biases).

Bell, Daniel. The Coming of Post-Industrial Society. New York: Basic Books, 1973. 507 pp.

*Coombs, Philip H. The World Educational Crisis: A Systems Anaylsis. New York: Oxford, 1968. 241 pp.

*Drucker, Peter F. The Age of Discontinuity: Guidelines to Our Changing Society. New York: Harper and Row, 1969.

Ferkiss, Victor C. Technological Man: The Myths and the Reality. New York: George Braziller, 1969. 352 pp.

McHale, John. The Future of the Future. New York: George Braziller, 1969. 322 pp.

*Meadows, Donella H., et al. The Limits to Growth. New York: Universe Books, 1972. 197 pp.

Michael, Donald N. On Learning to Plan-and Planning to Learn. San Francisco. Jossey-Bass, 1973. 304 pp.

Michael, Donald N. The Unprepared Society: Planning for a Precarious Future. New York: Basic Books, 1968. 132 pp.

Platt, John. "What We Must Do," Science, November 28, 1969, pp. 1115-1121.

Rossman, Michael. On Learning and Social Change. New York: Vintage Books, 1972. 365 pp.

Shane, Harold G. The Educational Significance of the Future. Bloomington, Indiana: Phi Delta Kappan, Inc., 1973. 116 pp.

Vickers, Geoffrey. Freedom in a Rocking Boat: Changing Values in an Unstable Society. Baltimore: Penguin, 1970. 215 pp.

To this list I will add a book of my own, Chicken Little Was Right! Or... The Future of Education is Now. This book synthesizes some of my thinking about what is and what should be, and offers some practical ideas about what people in the educational community can do to help us get to there from here.

The San Jose, California, public library has prepared a document called

The Future: Speculation on the World to Come, which lists perhaps fifty fact and fiction books and articles; this publication is for those interested in looking beyond the educational context.

As a particularly useful experience, I have attempted to compare and contrast what futurists have to say with what educational innovators have to say. Those interested in this approach may want to read the following:

Elam, Stanley, and W. P. McLure, eds. *Educational Requirements for the 1970's; an Interdisciplinary Approach*. New York: Frederick A. Praeger, 1967. (Published for Phi Delta Kappa.)

Ewald, William R., ed. *Environment and Change: The Next Fifty Years*. Bloomington, Indiana: Indiana University Press, 1968.

————————. *The Future of Learning and Teaching*. Washington, D.C.: NEA Center for the Study of Instruction, 1968. (Printed version of an address given at the NEA inauguration of Dr. Sam M. Lambert.)

Howe, Harold, II. *Picking Up the Options*. Washington, D.C.: NEA Department of Elementary School Principals, 1968.

Innovation in Education: New Directions for the American School. New York: Committee for Economic Development, 1968.

Leonard, George. *Education and Ecstasy*. New York: Delacorte Press, 1968.

Russell, James E. *Change and Challenge in American Education*. Boston: Houghton-Mifflin Company, 1965.

The Schools and the Challenge of Innovation. New York: Committee for Economic Development, 1969.

The Unfinished Journey: Issues in American Education. New York: John Day Company, 1968.

Any references to sources of material on the future would be imcomplete without at least two additional citings. One is the work underway at the regional educational laboratory in Phildelphia's Research for Better Schools, Inc. (RBS). One group of people in the laboratory is studying the topic "Planning Schools for the Future." They publish a newsletter by the same title. Early in their work they were able to gather together some outstanding educational leaders; these leaders were asked to give their views about the future. Daniel Bell, Harold Shane, Harold Laswell, Patrick Suppes, Ralph Tyler, Louis Rubin, Robert Glaser and Kenneth Boulding contributed to the conference by preparing special papers.

RBS later summarized each presentation. The summaries, as well as past issues of the newsletter, are available upon request from JoAnn Weinberger, Research for Better Schools, Suite 1700, 1700 Market Street, Philadelphia, Pennsylvania 19103 (215-561-4100).

One of the newsletters from RBS puts together and analyzes the results of an important nationwide survey. The survey was completed by educational leaders in selected innovative school districts; the leaders in those districts were asked what they thought the future would look like and what impact they predicted the changes would have on education.

Finally, I would like to suggest some readings in perhaps the only area where futurists and educators have some agreement--in the field of humanistic education. Kenneth Boulding, Professor of Economics, has pointed out that we are at a time in the history of our country when the only certainty is our need to learn to live with uncertainty.

The theme of uncertainty prevails in the literature on the future. Nearly all writings on the future calls for an exploration of the heretofore reserved, personal innerspace. There is agreement that we need to learn more about ourselves if we are to learn to cope with ambiguity--coping invariably means we need to understand ourselves to understand others and our associations with them. I have chosen to include here a few references for educators who may not be familiar with what is available in the affective reading place:

Alberti, Robert E. and Michael L. Emmons. *Your Perfect Right: A Guide to Assertive Behavior*. San Luis Obispo, California: IMPACT, 1970.

Alsehuler, Alfred S., Diane Tober and James McIntyre. *Teaching Achievement Motivation: Theory and Practice in Psychological Education*. Middletown, Connecticut: Education Ventures, Inc., 1971.

Geraldine Ball. *Magic Circle: An Overview of the Human Development Program.* La Mesa, California: Human Development Training Institute, Inc., 1974.

Berry, Keith E. et al. *The Guts to Grow*. San Rafael, California: Dimensions Publishing Company, 1974.

Brown, George Isaac. *Human Teaching for Human Learnings*. New York: Viking Press, 1971.

Curwin, Richard and Barbara Schneider Fuhrmann. *Discovering Your Teaching Self: Humanistic Approaches to Effective Teaching*. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1974.

James, Muriel and Dorothy Jongeward. Born to Win. Menlo Park, California: Addison-Wesley Publishing Company, 1971.

Johnson, David W. Reaching Out. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1972.

Jones, Richard N. Fantasy and Feeling in Education. New York: Harper and Row, 1968.

Landau, Elliott D., Sherrie Landau Epstein and Ann Plast Stone. Child Development Through Literature. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1972.

Mann, John. Learning To Be-The Education of Human Potential. New York: MacMillan Publishing Company, 1972.

Randolph, Norman and William Howe. Self-Enhancing Education. Palo Alto, California: Stanford Press, 1966.

Robert, Marc. Loneliness in the Schools (What To Do About It). Niles, Illinois: Argue Communications, 1973.

Romey, William D. Risk-Trust-Love: Learning in a Human Environment. Columbus, Ohio: Charles E. Merrill Company, 1972.

Roths, Louis E., Merrill Harmin and Sidney B. Simon. Values and Teaching. Columbus, Ohio: Charles E. Merrill Books, Inc., 1966.

Simon, Howe and Kirschenbaum. Values Clarification: A Handbook of Practical Strategies for Teachers and Students. 1973.

Stevens, John O. Awareness. Moab, Utah: Real People Press, 1971.

In addition to these, there is currently underway at the Nueva Learning Center a study on the development of a curriculum known as Self-Science. This is a curriculum within which the subject of the course is the participant; within the context of the course are experiential activities and specified cognitive processes for dealing with affective situations. Information about this curriculum is available from Karen Stone or Harold Q. Dillehunt, Nueva Learning Center, 6565 Skyline Boulevard, Hillsborough, California 94010 (415-348-2272).

Human resources are equally important--if not more so--than information available from other media. Appendix B offers the names and addresses of other persons who can be contacted.

APPENDIX A

INSTRUMENTS FOR SELF-ANALYSIS OF PERSONAL VALUES

APPENDIX A

Instruments for Self-Analysis of Personal Values

A-1. Analysis of Experiences

List below five experiences that have been especially significant to you. The experiences may include people you have known, places you have been, awards you have received and so on.

1.____

2.____

3.____

4.____

5.____

Analyze each event by checking on the following grid the descriptions that best fit the reason for the experience's importance to you. When the analysis is complete, place an "x" in the summary column at the right edge of the grid for those items marked three or more times. The x-marked items explain why the experiences were important.

APPENDIX A-1 (cont'd)

Analysis of Personal Experience

EXPERIENCES						SUMMARY
Doing what I want to do.						
Doing things the way I think they should be done.						
Using skill or know-how!						
Learning new things.						
Getting people to do what I want them to do.						
Getting recognition, approval or respect from others.						
My sense of self-respect.						
My integrity.						
Strengthening my feeling of acceptance among the people I see socially.						
Strengthening my feeling of acceptance among the people I work with.						
Strengthening my feeling of love and acceptance within my family or among my close friends.						
Strengthening my hold on my job or assuring myself of continued business or income.						
Getting a new job or a promotion, or generating new business or more income.						
Obtaining insurance, or accumulating savings, or doing something toward my retirement.						
Having adequate shelter.						
Avoiding bodily harm.						
Having enough to eat and drink.						
Staying alive.						

APPENDIX A-2

THE FIVE-SORT VALUE INVENTORY

Each cluster group below contains five values. In the parenthesis preceding each value, place a number from 1 to 5. Number 1 represents your HIGHEST ranking value in that group; number 5 represents the value you rank the least in that group. Be sure to number each value; you must give a different rating to each value listed in each group of five. Repeat the same process for all 21 groups.

1. ( ) Achievement
( ) Altruism
( ) Justice
( ) Religious Faith
( ) Wealth

2. ( ) Altruism
( ) Autonomy
( ) Loyalty
( ) Power
( ) Recognition

3. ( ) Creativity
( ) Love
( ) Pleasure
( ) Recognition
( ) Wealth

4. ( ) Aesthetics
( ) Justice
( ) Pleasure
( ) Power
( ) Wisdom

5. ( ) Altruism
( ) Honesty
( ) Love
( ) Physical Appearance
( ) Wisdom

6. ( ) Achievement
( ) Aesthetics
( ) Health
( ) Honesty
( ) Recognition

7. ( ) Achievement
( ) Autonomy
( ) Physical Appearance
( ) Pleasure
( ) Skill

8. ( ) Autonomy
( ) Emotional Well-Being
( ) Health
( ) Wealth
( ) Wisdom

9. ( ) Honesty
( ) Knowledge
( ) Power
( ) Skill
( ) Wealth

10. ( ) Achievement
( ) Emotional Well-Being
( ) Love
( ) Morality
( ) Power

11. ( ) Aesthetics
( ) Autonomy
( ) Knowledge
( ) Love
( ) Religious Faith

12. ( ) Aesthetics
( ) Loyalty
( ) Morality
( ) Physical Appearance
( ) Wealth

13. ( ) Creativity
( ) Health
( ) Physical Appearance
( ) Power
( ) Religious Faith

14. ( ) Health
( ) Justice
( ) Love
( ) Loyalty
( ) Skill

15. ( ) Aesthetics
( ) Altruism
( ) Creativity
( ) Emotional Well-Being
( ) Skill

16. ( ) Emotional Well-Being
( ) Justice
( ) Knowledge
( ) Physical Appearance
( ) Recognition

17. ( ) Altruism
( ) Health
( ) Knowledge
( ) Morality
( ) Pleasure

18. ( ) Morality
( ) Recognition
( ) Religious Faith
( ) Skill
( ) Wisdom

19. ( ) Emotional Well-Being
( ) Honesty
( ) Loyalty
( ) Pleasure
( ) Religious Faith

20. ( ) Achievement
( ) Creativity
( ) Knowledge
( ) Loyalty
( ) Wisdom

21. ( ) Autonomy
( ) Creativity
( ) Honesty
( ) Justice
( ) Morality

APPENDIX A-2 (cont'd)

To summarize the results of the previous exercise, enter the numbers you recorded (for the first set of five) in the first box for each of those five values below. Each value occurs five times, so when you are through recording all 21 sets of five, you will have five entries for each value. Add those five numbers across. The TOTALS column will then give you some idea of the respective weights you give to the values involved. Remember, the lower the number in the TOTALS column, the higher that value ranks in your priorities.

						TOTAL
1. Achievement						
2. Aesthetics						
3. Altruism						
4. Autonomy						
5. Creativity						
6. Emotional Well-Being						
7. Health						
8. Honesty						
9. Justice						
10. Knowledge						
11. Love						
12. Loyalty						
13. Morality						
14. Physical Appearance						
15. Pleasure						
16. Power						
17. Recognition						
18. Religious Faith						
19. Skill						
20. Wealth						
21. Wisdom						

APPENDIX B

DETERMINING INSTITUTIONAL VALUES

APPENDIX B

Determining Institutional Values

WHERE DO YOU STAND?

Instructions

1. Make a mark "X" somewhere along each line which best represents your own feelings about each statement.
2. Make a mark "O" somewhere along each line which best represents how you feel the school is functioning relative to each of the statements.

ASSUMPTIONS ABOUT CHILDREN'S EXPERIENCES

MOTIVATION:

Assumption 1: Children are innately curious; they will explore their environment without adult intervention.

Strongly Agree	Agree	No Strong Feelings	Disagree	Strongly Disagree

Assumption 2: Exploratory behavior is self-perpetuating.

Strongly Agree	Agree	No Strong Feelings	Disagree	Strongly Disagree

CONDITIONS FOR LEARNING:

Assumption 3: The child will display natural exploratory behavior if not threatened.

Strongly Agree	Agree	No Strong Feelings	Disagree	Strongly Disagree

Assumption 4: Confidence in self is highly related to capacity for learning and for making important choices affecting one's learning.

Strongly Agree	Agree	No Strong Feelings	Disagree	Strongly Disagree

Assumption 5: Active exploration in a rich environment, offering a wide array of manipulative materials, will facilitate a child's learning.

Strongly Agree	Agree	No Strong Feelings	Disagree	Strongly Disagree

APPENDIX B (cont'd)

Assumption 6: Play is not distinguished from work as the predominant mode of learning in early childhood.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 7: Children have both the competence and the right to make significant decisions concerning their own learning.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 8: Children will learn if they are given choice in the selection of the material they wish to work with and in the choice of questions they wish to pursue with respect to those materials.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 9: Given the opportunity, children will choose to engage in activities which will be of high interest to them.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 10: If a child is fully involved in and is having fun with an activity, learning is taking place.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

SOCIAL LEARNING:

Assumption 11: When two or more children are interested in exploring the same problem or the same materials, they will often choose to collaborate in some way.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 12: When a child learns something which is important, the child will wish to share with others.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

APPENDIX B (cont'd)

INTELLECTUAL DEVELOPMENT:

Assumption 13: Concept formation proceeds very slowly.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 14: Children learn and develop intellectually not only at their own rate but in their own style.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 15: Children pass through similar stages of intellectual development each in his or her own way and at his or her own rate.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 16: Intellectual growth and development take place through a sequence of concrete experiences followed by abstractions.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 17: Verbal abstractions should follow direct experience with objects and ideas, not precede them or substitute for them.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

EVALUATION:

Assumption 18: The preferred source of verification for a child's solution to a problem comes through the materials with which the child is working.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 19: Errors are necessarily a part of the learning process; they are to be expected for they contain information essential for further learning.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

APPENDIX B (cont'd)

Assumption 20: Those qualities of a person's learning which can be carefully measured are not necessarily the most important.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 21: Objective measures of performance may have a negative affect upon learning.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 22: Learning is best assessed by direct observation.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

Assumption 23: The best way to evaluate the effect of the school experience is to observe the child over a long period of time.

Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

RECORDING:

SAMPLE (Record deviations of more than one step; record A but not B).

A. x		o		include
Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

B.	x	o		Do Not Include
Strongly Agree	Agree	No Strong Feeling	Disagree	Strongly Disagree

APPENDIX C

HUMAN RESOURCES

APPE[illegible] C

HUMAN RESOURCES

Mary Jo Livix
Associate Superintendent
Arizona Department of Education
1535 West Jefferson
Phoenix, Arizona 85007

Tom McCollough
Director
Project Redesign
25 Churchill Avenue
Palo Alto, California 94306

Richard McKay
Assistant State Superintendent for
Resources, Evaluation and Information
Systems
Maryland State Department of Education
P.O. Box 8717 BWI Airport
Baltimore, Maryland 21240

O. W. Markley
Director
Educational Policy Research Center
Stanford Research Center
Menlo Park, California

John C. Monnig
Assistant Superintendent of Curriculum
School District of Springfield Township
Administration Building
1901 East Paper Mill Road
Oreland, Pennsylvania 19075

John A. Murphy
Superintendent of Schools
Dennis-Yarmouth School District
1292 Route 28
South Yarmouth, Massachusetts 02664

Tom Neel
Superintendent of Schools
Amphitheater School District
Tucson, Arizona

Ruth Nickse
Project Change
Department of Education
State University of New York
Cortland, New York

James L. Olivero
Professional Development Programs &
Project Leadership Executive
Association of California School
Administrations
1575 Old Bayshore Hwy.
Burlingame, California 94010

Ed Pino
President
International Graduate School of Education
University Park Place
Parker, Colorado 80134

Milton Schmidt
Director of Program Development
Cherry Creek School District
4700 South Yosemite
Englewood, Colorado 80110

Harold G. Shane
Professor
Indiana University
Bloomington, Indiana

Ruth Stone
Principal
Oakleaf Elementary School
Oakleaf Drive
Pittsburgh, Pennsylvania 15227

Joseph Tamburo
Assistant Superintendent
Springfield Public Schools
Raymond Chisholm School
Shunpike Road
Springfield, New Jersey 97981

Grace Templeton
Administrative Assistant for Curriculum
Charlotte-Mecklenburg Schools
701 East 2nd Street
Charlotte, North Carolina 28201

APPENDIX C (cont'd)

Robert L. Thomas
Principal
Central Columbus Middle School
4777 Old Berwick Road
Bloomsburg, Pennsylvania 17815

JoAnn Weinberger
Research for Better Schools, Inc.
Suite 1700, 1700 Market Street
Philadelphia, Pennsylvania 19103

APPENDIX D

WORKING COPIES OF THE SELF-PERFORMANCE ACHIEVEMENT RECORD

APPENDIX D

WORKING COPY OF THE SELF-PERFORMANCE ACHIEVEMENT RECORD (SPAR)

INDIVIDUAL PLAN

Name______________________________

Location__________________________

I. Goal--To Learn About the Future

_X_ Personal Goal

___ Institutional Goal

II. ACTIVITIES	III. OBJECTIVE(S)	IV. EVIDENCE
A. Observe *Future Shock*	A. Gain understanding of forces causing change.	A. List of six factors forcing change.
B. Read 10 books or articles on the future.	B. Gain understanding of what scholars are sayings about the future.	B. Matched list of who says what about the future.
C. Prepare a list of educational projections	C. Brainstorm potential directions.	C. Completed list of potential future educational directions.
D. Present findings to school superintendent.	D. Help others become aware.	D. Formal presentation at school board meeting.
E. Begin pilot Future Study course in high school.	E. Get more people to be concerned about the future.	E. Course started with minimum of 20 students.

APPENDIX D (cont'd)

V. LEARNING NEEDED		VI. Time Path		VII. Progress Report
Skills, Attitudes, Knowledge	Where Obtained?	Start	Complete	
A. Find Film	Media Extension Center--Berkeley	9/15	10/1	Make progress report to superintendent at regular intervals.
B. Locate Books	Public Library	9/15	2/1	
C. Produce List	Talk over with other interested educators	3/1	4/4	
D. N/A	N/A			
E. Prepare Lesson Plan	Get help from curriculum resource people at district office.	4/6	6/15	

GROUP PLAN

Name ____________________

Location ____________________

I. Goal: To Obtain Background Information On The Future

____ Personal

X Institutional

II. ACTIVITIES	III. OBJECTIVES	IV. EVIDENCE
A. Establish Steering Committee	A. Limit group to eight people.	A. Roster of Steering Committee members.
B. Correspond with RBS in Philadelphia.	B. Obtain information regarding early studies.	B. Publications from RBS.
C. Hold organization meeting with school population.	C. Establish interest and organize into task force.	C. Lists of participants and various task forces.
D. Etc.	D. N/A	D. N/A

APPENDIX D (cont'd)

V. LEARNING NEEDED		VI. Time Path		VII. Progress Report
Skills, Attitudes, Knowledge	Where Obtained?	Start	Complete	
A. Organizational understanding	A. Read OD book by Smuck and Runkel	9/1	10/3	At appropriate intervals to the Board of Education.
B. Review RBS studies	B. RBS Laboratory in Philadelphia.	9/20	10/29	
C. Communication exercises	C. Obtain outside consultant to provide learners with new skills in prioritizing and force field analysis.	10/15	12/2	

SELF-PERFORMANCE ACHIEVEMENT RECORD (SPAR) FORM

I. What is your institutional or personal GOAL statement? (See pages 5-7*)

____

____

____

____
Name

____
Date

Based on the total improvement needs of your school or yourself, this project represents--

_____ a high priority need.

_____ a low priority need.

II. What are the ACTIVITIES? (See pages 7-9)	III. What are the OBJECTIVES? (See pages 9-17)	IV. What are the EVIDENCES OF SUCCESS? (See pages 18-21)

*Page numbers refer to sections of the Self-Performance Achievement Record. A CADRE Occasional Paper available from the Nueva Learning Center, 6565 Skyline Boulevard, Hillsborough, California 94010. $4.50

SPAR FORM (CONT'D)

V. INDIVIDUALIZED CONTINUING EDUCATION PROGRAM (See pages 21-22) What new abilities do *you* need to achieve this project?		VI. What are the STARTING AND COMPLETION DATES? (See page 23)	VII. LOG OF PROGRESS REPORTS (See page 23)
What new skills, attitudes, or knowledge do you need?	How will you obtain each new need?		